AE 460 – Aerodynamics and Propulsion Laboratory
(Experimental Methods in Aerodynamics and Propulsion)
Fall Semester 2025

Course Structure: **Credit:**
Lecture 2 hours
9:00 – 9:50 AM Tuesdays and Thursdays
151 Loomis Laboratory

Weekly laboratory sessions
Talbot Laboratory 18D (basement)

Course Objectives:
Throughout the semester, students in this course will be able to:

- Utilize modern measurement devices and data-acquisition systems to collect meaningful data in aerodynamics and propulsion applications.
- Interpret these experimental results by applying the knowledge already gained in other portions of the core aerospace engineering curriculum.
- Analyze and summarize those data in high-quality technical reports that are presented in both written and verbal formats.
- Recognize and practice effective teamwork, leveraging their strengths and negotiating through differences to support their team.
- Generate a unique design for an aerospace vehicle based on provided constraints.
- Design an experiment for testing and evaluating the aerodynamic performance of that vehicle.

Instructor: Theresa Saxton-Fox, PhD
Office Location: 312 Talbot Laboratory
E-mail: tsaxtonf@illinois.edu
Office hours: 3 – 4 pm Thursdays or by appointment

Teaching Assistants:
Nissrine Aziz aziz7@illinois.edu
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Course Website:
https://canvas.illinois.edu
The Canvas website for this course will be used extensively for listing important course announcements and posting class presentations.
www.gradescope.com
We will use Gradescope for assignment submissions and grading.

Required Text: None

Conduct of the Course:

- Students will be assigned into groups (A or B) of 4 – 5 people within their sections
- Reports will be submitted for each laboratory in accordance with posted schedule
- Each group will perform 6 experiments during the semester as indicated in the schedule.
  - The reports will be turned in as a group (i.e., all students in Group A)

- Each group must use only the data that they have taken and are not permitted to use data from other groups. You are not permitted to switch groups or group members for the laboratory or report. Any exceptions to these rules must be discussed with the laboratory TA and course instructor before any action is taken.

- All laboratory reports are to be typed, and graphs should be made using plotting software (e.g., Matlab, Tecplot, Excel).
- Laboratory reports are due at the beginning of the lab period on the due date.
- Attendance will be noted at laboratory sessions by the teaching assistants.
- Although all sections perform the same experiment, the lab reports must be the original work of each group, sub-group, or individual student. This includes text, figures, and graphs.
- Unsafe behavior will not be tolerated.

- **Grading:**

In-class exercises	5%	
Homework	6%	
Tunnel calibration lab	12%	Group Laboratory Note
Airfoil pressure lab	15%	Group Full Engineering Report
Jet thrust lab	12%	Group Presentations
Hotwire lab	15%	Group Full Engineering Report
Jet engine lab	12%	Group Laboratory Note
Design lab	15%	Group Full Engineering Report
Team/Peer Evaluations	6%	
Leader role	2%	Additional weighting on the report you lead

Laboratory Sections:

Day / Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 AM	AB1	Lecture	AB7	Lecture	ABQ
10:00 AM		AB4		ABX	
11:00 AM	ABU				ABP
12:00 PM					
1:00 PM		AB5		ABY	
2:00 PM					
3:00 PM	AB3		AB9		
4:00 PM					
5:00 PM	ABV	AB6	ABW	ABZ	
6:00 PM					
7:00 PM	ABS	AB2	ABT		
8:00 PM					

Accommodations:
We want everyone to be able to succeed in this class. Students who require disability-related academic adjustments and / or auxiliary aids should contact Professor Saxton-Fox and the Disability Resources and Educational Services (DRES) to ensure that proper accommodations are made. To contact DRES, you can visit them at 1207 S. Oak St., Champaign, call them at 333-4603, email them at disability@illinois.edu, or go to their website at disability.illinois.edu. Please do this as early in the class as you can so that we can be set up to succeed from the start.

Belonging Statement:
The effectiveness of our course is dependent upon each of us to create a safe and encouraging learning

environment that allows for the open exchange of ideas while also ensuring equitable opportunities and respect for all of us. Everyone is expected to help establish and maintain an environment in which students, staff, and faculty can contribute without fear of personal ridicule, or intolerant or offensive language. College is a time of learning and growing for all of us, and we ask everyone to be ready to learn and grow in your respect and understanding of others, in addition to your understanding of the course material. The Aerospace Engineering department has a committee called Aero's Space to Belong. They offer office hours, one-on-one discussion, and a reporting process. If you experience conflict that undermines your or someone else's feelings of belonging, please consider talking to your instructors or using these resources: https://aerospace.illinois.edu/diversity/reporting.

Academic integrity:
Each assignment turned in must reflect the knowledge and language of your group.

- The use of references is encouraged, but be sure to cite the source of information.
- You may not copy work from other sources, including published sources (books, papers, or websites), other students, or AI sources. If you directly quote or use language from a source, please put that language in quotation marks, in addition to citing the source.
- If you use AI, please provide your prompts / the conversation with the AI system as an appendix to your assignment.
- If you use AI to find references, please take care – AI can hallucinate references. Always look up the cited work prior to citing it.

The University of Illinois at Urbana-Champaign Student Code should also be considered as a part of this syllabus.

- Students should pay particular attention to Article 1, Part 4: Academic Integrity. Read the Code at the following URL: http://studentcode.illinois.edu/.
- Academic dishonesty will result in a sanction proportionate to the severity of the infraction, with possible sanctions described in 1-404 of the Student Code (https://studentcode.illinois.edu/article1/part4/1-404/).
- As a student it is your responsibility to refrain from infractions of academic integrity and from conduct that aids others in such infractions. A short guide to academic integrity issues may be found at https://provost.illinois.edu/policies/policies/academic-integrity/students-quick-reference-guide-to-academic-integrity/.

Do not hesitate to ask the if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

Getting help:
For technical help on the course, please contact us over Canvas or attend one of our weekly office hours. Other useful resources for assistance include:

- Student Assistance Center
- CARE
- Campus Counseling Center
- Aero's Space to Belong