

EAS4810C: Aerospace Sciences Lab and Design - Syllabus

(Modifications to this syllabus may be required during the semester. Any changes to the syllabus will be posted on the course web site and typically announced in class.)

1. **Catalog Description:** Low speed wind tunnel testing, pressure and temperature measurements, load balances, hot film anemometry, uncertainty analysis, verification of numerical techniques, Credits: 3
2. **Pre-requisites:** EAS4101, EML3301C, EAS 4132.
3. **Course Objectives:** This course provides an introduction to incompressible and compressible experimental aerodynamics. A variety of experimental techniques are introduced including pressure measurements, pressure scanners, temperature measurements, load balances, and hot film anemometry. Numerical simulations using XFOIL are verified experimentally. Students will become proficient in planning and executing a variety of techniques common to low speed wind tunnel testing.
4. **Instructors:**
John Abbitt, Ph.D.
Office location: 312A NSC
Telephone: 392-7557
E-mail address: jda@ufl.edu
Office hours: see Canvas

Lawrence Ukeiley, Ph.D.
Office location: 312 MAE-A
Telephone: 392-9459
E-mail address: ukeiley@ufl.edu
Office hours: see Canvas
5. **Meeting Times and Location:**
Lectures Tues & Thurs Period 2 in MAE-B Room 211
See your own schedule for lab periods
6. **Material and Supply Fees:** TBD
7. **Relation to Program Outcomes (ABET):**

Outcome	Coverage*
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	High
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	High
3. An ability to communicate effectively with a range of audiences	High
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	Low
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	High

6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	High
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	High

8. **Textbooks Required:** None

9. **Recommended Reading:** Barlow, Rae, and Pope, *Low-Speed Wind Tunnel Testing*, 3rd edition, Wiley.

10. **Course Outline and Schedule:** See the detailed schedule available at <https://lss.at.ufl.edu/> (use Canvas system)

11. **Attendance and Expectations:** Attendance is mandatory. Excused absences will be given for documented medical reasons, UF related travel or job interview travel. Documentation must be in the form of a doctor's note, or letter from the sponsor of the travel. During class, cell phones must be turned off.

Assessment Methods and Grading:

- a. Lab Reports 80%
- b. Design Report 20%

If a student feels that there is an error in the grading, it should be brought to the attention of the instructor within two weeks after the graded material is handed back. Scores will not be reconsidered beyond the two week period.

12. **Grading Scale:**

94 ≤ A ≤ 100	90 ≤ A- < 94	(No A+)		
87 ≤ B+ < 90	83 ≤ B < 87	80 ≤ B- < 83		
77 ≤ C+ < 80	73 ≤ C < 77	70 ≤ C- < 73		
67 ≤ D+ < 70	63 ≤ D < 67	60 ≤ D- < 63	E < 60	

There is no rounding up or down.

Assignments must be submitted on time to receive full credit. If a lab report is late, you will lose 10% of the total points available every 24 hours. The same policy is applied to design reports. One minute late is the same as one day late. For example, if a report is worth 100 points, you will lose 10 points per day.

13. **Make-up Policy:** No late assignments will be accepted. Makeup labs are not normally allowed. If you cannot attend meet a deadline, you must contact the instructor prior to the deadline. Arrangements will be made for students on a case by case basis. (Failure to contact the instructor prior to the deadline will result in a zero on that assignment.)

14. **Honesty Policy and Ethical Considerations: Honesty Policy:** All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. Typical disciplinary action would be a grade of E in the course for a first offense. A second offense (which includes other courses) would likely result in a two-semester suspension. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others. If you use or access or handle a cell phone in any way during an exam, it will be an honor violation with a likely grade of E in the course.

Important: In this course, all lab reports are group lab reports. That means that all the analysis and write-up is to be the groups own individual work. Information (including data) may not be shared among groups. You may discuss lab concepts and procedures with classmates, and you may get help on how to perform an analysis, but **whatever work you turn in, ultimately must be work performed only by members of the group.** You may *not* share tables, graphs, spreadsheets, etc., with other groups. *You may not refer to or use old lab reports in any way.*

15. **In-Class Recording:** Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for,

a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

16. **Accommodation for Students with Disabilities:** Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.
17. **Commitment to a Safe and Inclusive Learning Environment:** The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

18. **Software Use:** All faculty, staff and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.
19. **Campus Resources:**
[Health and Wellness](#)

U Matter, We Care:

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.
<https://lss.at.ufl.edu/help.shtml>.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling.
<https://www.crc.ufl.edu/>.

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.
<https://teachingcenter.ufl.edu/>.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.
<https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaint-process>.