Course: AERO 201 Introduction to Aerospace Engineering
MW 5:45 – 7:00 HRBB 124

AERO 201 Website: http://aeweb.tamu.edu/aero201/

Instructor: Dr. Thomas W. Strganac, P.E.
743C HRBB 845-1694  strag@tamu.edu
Professor of Aerospace Engineering

my colleges:  BS 1977 @ NC State  MS 1980 @ A&M  PhD 1987 @ Virginia Tech
my experience: NASA Goddard (‘75-‘82)  NASA Langley (‘82-‘89)  A&M (‘89 - )

Office Hours: 2–5 pm  MTWRF

I may be able to answer concise questions by e-mail (depends on the extent of reply required).

I welcome office visits but please arrive prepared to discuss your efforts.

Course Description: Exposure to aerospace engineering topics; application of engineering mechanics and mathematics to representative aerospace problems; and, practice in solving such problems.

Learning Objectives: At the end of this course, students should be able to understand:

1. the application of Newton’s Laws and conservation (of mass, momentum and energy) principles to the development of basic equations for aerodynamics and flight mechanics,
2. the development and purpose of the Standard Atmosphere,
3. basic concepts in aerodynamic theory including compressible vs. incompressible flow and viscous vs. inviscid flow,
4. basic aerodynamic concepts related to airfoils and wings,
5. airplane equations of motion, including the interrelationship between lift, drag, thrust and weight, and performance characteristics such as power requirements, range, endurance, ceiling and turn rate,
6. concepts related to aircraft static stability and control, and
7. the application of mathematics and engineering mechanics to the solution of introductory level aerospace engineering problems related to these prior objectives.

Syllabus: 

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Prerequisites: AERO 209 or registration therein

Attendance Policy: Students are expected to attend all classes and fully participate in the learning process.

Cell phone, Black Berry, and similar electronic devices are to be “off” during class.


We have a great textbook which you should find to be an excellent resource. In addition, Professor Anderson provides an outstanding background of aerospace history throughout the textbook. To appreciate your heritage, please read Chapter 1 and the “Historical Notes” sections found in each chapter. As an Aerospace Engineer, you should find this material of great interest.
Tests Subject to change, tests are scheduled for (1) **Wed. Oct. 2** and (2) **Wed. Nov. 13**: 5:45 – 7:00; HRBB 124.

| Grades                  | homework assignments from text | 10 %  
|-------------------------|--------------------------------|-------
| tests                   | two 75 minute tests at 25% each | 50 %  
| final (comprehensive)   | Friday, December 6, 7:30 – 9:30 AM | 25 %  YES … 7:30 AM  
| projects*               | as assigned                     | 15 %  

*AERO 201 is divided into two sections: section 50x and section 20x for students pursuing Honors credit. All students will be assigned the same homework, attend the same lectures, and be given the same tests. All grading will be uniform regardless of the section. However, AERO 201 projects may have an additional component (for example, more in-depth questions) to provide an extra challenge for students in the honors section (20x). Students in the 50x section are welcome to answer these questions.

I am sensitive to how the grade point jump between letter grades affects a student’s GPA. Accordingly, I strive to be very fair and provide every advantage to you through my grading system. For example, if I have misjudged my expectations of the students as a whole, then the grades may suggest a curve is appropriate. Also, I try to help prevent a single bad performance from costing a student a full letter grade; thus, at end of the course, I will consider all scores and reserve the right to "discount" the one bad day by you by increasing weight to your other strong performances. Always give AERO 201 your best effort. **A’s & B’s in AERO courses require work – please do your best to help yourself by taking full advantage of every opportunity given to you.**

**Homework**

Homework is essential to the learning process. Your conscientious study efforts are rewarded by success on tests as you recognize concepts, problems, processes and formulae from your studies.

As you have probably learned, AERO students are expected to **budget at least 3 hours on outside study per lecture hour**. As an engineer, you are expected to maintain self-initiative and discipline. Accordingly, you are expected to schedule proper time for study. Most AERO assignments take much time, patience, effort and deliberation. Homework must not be initiated the day before it is due.

Solutions to homework and tests will be posted on the AERO 201 website. These solutions should be used to verify your efforts – not used to solve the problem. I encourage people to discuss their efforts with others but you must expend your personal time & energy to understand the essence of homework and course material. Simply reading a posted solution or using another’s solution will be of little use to you – you must put forth the effort to understand.

The textbook has excellent homework and example problems – indeed, they have been worked by many others before you, BUT they are new to you. These must be worked / studied by you especially since they will prove to help unlock the mystery in a full solution that you might experience at times.

**Test Policy**

Tests are “**closed book – closed notes**”. An equation sheet is provided to minimize memorizations – but students must know the appropriate use and application of equations, as well as underlying development and assumptions.

Tests are scheduled in advance so plan accordingly. **Late (make-up) tests are NOT given.**

Unless unavoidable by unexpected genuine emergencies*, you must see me IN ADVANCE for valid schedule conflicts associated with university approved excused absences. I allow a student to take a test early if planned (for example, if a student has an official field trip scheduled for test time, I allow the student to test immediately prior to departure).

If a test is missed due to an absence arising from a verifiable and approved emergency*, then the higher of the other test grade or exam grade will be used to replace the missed grade. Then, if the student wishes, a make-up test will be provided following the exam period for the semester. In this situation, every option is given to the student to receive the best grade possible.

Otherwise, if a test is missed, then the lower of the other test or exam grade is assigned. I reserve the right to assign a zero.

*see university student rules regarding attendance.
Grade disputes

I grade all tests personally, and this allows me to get to know you. Let your test ‘talk’ to me, proving your knowledge.

Nonetheless, misunderstandings and mistakes by me happen from time-to-time. To objectively consider such cases, I have a written appeal process required for grading disputes on tests. This written process allows facts to be presented without emotion. You are asked to present your concerns in writing with specific details. The appeal must include a full and correct solution to the problem. You are asked to recommend a new grade. I will consider the appeal and I will reply accordingly.

“No Calculator Rule” on tests or exam

Engineers are expected to think and formulate solutions. Although number crunching is comforting, I know you can use a calculator. Our test time is limited and my tests are intended to measure your thinking processes. Thus, calculators are not allowed on tests or exam. Although numbers may be provided, I am interested only in the solution process in variable form, you should not complete simple math operations such as multiplication and division (it is a waste of your test time).

Survival Tips to Success in AERO 201 (and Engineering)

- Engineering is very demanding. Study is your current ‘full time, plus’ occupation (an investment for your future).
- Attend and be attentive in all classes.
- Do all homework with a sincere effort to learn.
- Peers can help one understand, but learn to think and problem solve on your own.
- Re-write or annotate your notes – this process helps reinforce what was learned / covered in the lecture.
- Use the textbook – it is an excellent resource.
- Read ahead – this prepares you to ask informed questions on current lecture material.
- Budget sufficient study time, engineering courses demand 3 hours plus of study per lecture hour.
- Take advantage of opportunity offered to you to perform.
- Relax the night before tests – cramming does not help in engineering courses.

Scholastic Dishonesty

As a student in my course, you are expected and required to follow all aspects of the Code of Honor. It is your code. As your professor, I pledge to tolerate no form of academic dishonesty, and I pledge to work swiftly to remove violators from TAMU.

    The Code of Honor is stated simply as

        An Aggie does not lie, cheat, or steal or tolerate those who do.

The Code of Honor is an effort to unify the aims of all Texas A&M men and women toward a high code of ethics and personal dignity. For most, living under this code will be no problem, as it asks nothing of a person that is beyond reason. It only calls for honesty and integrity, characteristics that Aggies have always exemplified.

As commonly defined, plagiarism consists of passing off as one's own the ideas, work, writings, etc., that belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated. If you have questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules [http://student-rules.tamu.edu/], under the section "Scholastic Dishonesty."

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