

EAS4700 Aerospace Design

Modifications to this syllabus may be required during the semester. Any changes to the syllabus will be posted on announced in class and on CANVAS.

Instructor: Ting Dong dting0603@ufl.edu

Lecture time: M, 9 - 10th, PSY 130

W, 9th, LAR 310

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We are designing and building a Mars rover this semester.

Gator CHOMP: Cryogenic Horizons of Martian Poles

The project statement is posted in files.

You also have the option to skip this project and use NASA competition instead: [https://www.nasa.gov/learning-resources/nasa-human-exploration-rover-challenge/Links to an external site.](https://www.nasa.gov/learning-resources/nasa-human-exploration-rover-challenge/Links%20to%20an%20external%20site)

Assignments:

1. **Peer evaluation** 20% (Peer evaluation is submitted weekly starting from the first week of group work towards the end of the semester.)

Individuals with peer evaluation scores 1.5 standard deviations below the class average will get one-letter grade deduction.

Individuals with peer evaluation scores 2 standard deviations below the class average earn a failing grade in EML4700 regardless of points accumulated in the class.

2. **Theory design weekly reports** 15% (From week 2 to week 6)

- Introduction, background and history study, overall conceptual design.
- Subsystem design.

Each subsystem design should include conceptual design, trade studies, electrical and control system, CAD model, material selection and manufacturing methods.

1. wheel, leg, drivetrain, differential, steering, etc.
2. Robotic arm

3. Suspension and chassis

- Structural analysis

Optimize the dimension of critical component(s) to make sure your rover can survive 4g launch load and 6 ft drop test with a safety factor 1.5.

3. Manufacturing and testing weekly goal and reflection report 5% (From week 6 until the end of the semester)

4. Test 35%

5. 90-second pitch video 5%

6. Final presentation 10%

7. Final report 10%

Student learning outcomes:

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- 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
- An ability to communicate effectively with a range of audiences
- 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
- 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
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Proposed grading scale

93-100 = A, 90-92.9 = A-, 87-89.9 = B+, 83-86.9 = B, 80-82.9 = B-, 77-79.9 = C+, 73-76.9 = C, 70-72.9 = C-, 67-69.9 = D+, 63-66.9 = D, 60-62.9 = D-, <60 = E

N.B. A grade of C- will not be a qualifying grade for critical tracking courses. Furthermore, in order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). For more information on grades and grading policies, please visit: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> Links to an external site.

Re-grading Policy: Any re-grade requests must be submitted in an e-mail or in writing within two weeks after return of the graded paper. The written request must explain in detail what you want the grader to do and where you believe he/she has made a mistake in grading.

Attendance and Excused Absences: Even though attendance is not required, it is extremely important that students attend the class regularly. Some of the classes will be used for group discussion/group work. So, absence from class will affect your peer evaluation score.

Miscellaneous Policies: Students will be held responsible for knowledge of all scheduling and policy announcements made in class.

Academic Honesty: UF students are bound by The Honor Pledge which states

We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code.

On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “

On my honor, I have neither given nor received unauthorized aid in doing this assignment

The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

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Course Evaluations: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations

online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/Links to an external site.>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/Links to an external site.>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/Links to an external site.>.

Software Use: All faculty, staff and student 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 peers to the highest standards of honesty and integrity.

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Student Privacy: There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information see: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html> [Links to an external site.](#)

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Accommodations For Disabilities: Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

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 undergraduate coordinator (Dr. Griffis)
- 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@ufl.edu

Campus Resources:

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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. 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>[Links to an external site.](#), and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS) at Student Health Care Center, 392-1161.

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

Sexual Discrimination, Harassment, Assault, Or Violence: If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Academic Resources

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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>[Links to an external site.](#)

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

Library Support, <http://cms.uflib.ufl.edu/askLinks to an external site.>. 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/Links to an external site.>.

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

Student Complaints

Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdfLinks to an external site..