

AE 4610 Syllabus

Dynamics and Control Laboratory AE4610, Section A, 2 Credits
Fall 2026

Instructor Information

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General Course Information

Description

Experiments in dynamics and control related to aerospace engineering topics

Course Learning Outcomes

Master

- Creating Effective Graphics
- Technical Communications: How to Write an Effective Technical Report
- Relationship of Time and Frequency Domains

Basic

- Critical Reasoning and Strategic Thinking, Decision Making
- Team Skills
- Documentation of Test Conditions/Procedures
- Frequency Content and Application of Transforms
- Data fitting including sensitivity analysis
- Programming real time embedded systems

Expose

- Lab safety
- Practical control system elements (sensors, actuators, gyroscopes, control surfaces)

Required Course Materials

Lab manuals will be made available on GITBook.

Grading Policy:

Short quizzes: 5%, Lab experiments: 60%, Group project: 35%

A>90; B>80; C>65; D>50

Assignments:

Lab 0 (Individual report): 5%

Lab 1 (Group report): 15%

Lab 2 (Group report): 15%

Lab 3 (Group report): 15%

Lab 4 (Group report): 10%

Group project (group report and poster presentation): 35%

In-class short quizzes (Individual): 5%

Description of Graded Components

All lab reports except for Lab 0 are group reports. However, controller designs and simulation evaluations for each lab must be performed individually during the lab, and a summary of individual controller designs and simulation evaluations must be included clearly marked with individual student's name in the group report. In addition, include a table on the title page listing the names of the group members contributing to the individual sections of the report. All lab reports must be submitted by the deadline in pdf format on Canvas for receiving full credit. Short 5-minute quizzes will be held at the end of every lecture. Group project evaluation will include project report, poster and live or video-recorded demo of the working of the project hardware. Students will also be evaluated by their team members, once at mid-semester, and once at the end of the semester. These evaluations will be taken into consideration when assigning the final grades in borderline cases.

Course Policies

Attendance and/or Participation

This is a laboratory course with one hour of lecture component and two hours of lab every week. Attendance and participation in all lab experiments is required to receive full credit. Peer evaluations from group members will also be used in assigning final grades. Also, five-minute short quizzes will be held at the end of every lecture requiring attendance in all lectures.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review [Georgia Tech's Honor Code](#) and the student [Code of Conduct](#).

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Core IMPACTS

[Not Applicable](#)

Accommodation for Students with Disabilities

If you are a student with learning needs that require special accommodation, [contact the Office of Disability Services](#) as soon as possible to make an appointment to discuss your

special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. [The Student-Faculty Expectations](#) articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Pre-&/or Co-Requisites

AE 2610 Introduction to Experimental Methods in Aerospace, AE 3531 Control System Analysis and Design

Collaboration, Group Work, and Use of Generative AI

You are required to work as a group and collaborate on lab experiments and lab reports. We treat AI-based assistance, such as ChatGPT and Copilot, the same way we treat collaboration with other people: you are welcome to talk about your ideas and work with other people, both inside and outside the lab, as well as with AI-based assistants.

However, all work you submit must be your own. You should never include in your reports anything that was not written directly by you without proper citation (including quotation marks and in-line citation for direct quotes).

Extensions, Late Assignments, & Re-Scheduled/Missed Exams

Late submissions of project reports without prior approval will be penalized accordingly. Make-up of missed labs and missed short quizzes for illness, approved Institute activities or religious observances will be permitted.