

# AE 3531: Control Systems Analysis and Design

## Course Information

- **Instructor:** Glen Chou (chou@gatech.edu)
- **Course Prefix and Number:** AE 3531
- **Term:** Fall 2026

## Course Description

Control system performance analysis and specifications, classical methods of control system analysis and design, introduction to modern control methods. Students cannot receive credit for AE 3531 and AE 3515 or AE 3531 and ME 4452.

## Course Learning Outcomes

By enrolling in this course, students will:

1. Create mathematical models of physical systems and use those models to analyze the system's dynamic behavior
2. Design and evaluate control systems for a dynamic system of interest to achieve the desired performance from that system using both classical and modern control methods
3. For a given system of interest, mathematically describe the system and develop an appropriate model, choosing the correct laws, relationships, and equations to appropriately analyze the system and obtain desired information about its behavior and stability
4. Correctly produce and insightfully interpret the results of an analysis of a control system

## Required Course Materials

No textbooks or materials are required.

## Grading Policy

This course is graded on a **Letter Grade** basis.

The tentative grading breakdown is as follows (see the following sections for details on each):

- Homework: 30%

- Conceptual quizzes: 10%
- Midterm exams: 30%
- Final exam: 30%
- Extra credit (participation): 5%

Final grades for this course will be assigned based on the following scale:

- $A \geq 89.5\%$
- $B \geq 79.5\%$
- $C \geq 69.5\%$
- $D \geq 59.5\%$
- $F < 59.5\%$

If necessary, this course will be curved, so these grade cutoffs may change. However, the cutoffs will never move upwards, only downwards.

## **Attendance Policy**

You are not obligated to come in person to class; however, there is an in-class participation bonus (up to 5%, based on in-person clicker quizzes).

## **Academic and Research Honesty/Integrity Statement**

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 the [Student Code of Conduct](#) and the [Academic Honor Code](#), especially [Appendix A: Graduate Addendum to the Academic Honor Code](#).

Students are expected to perform research in an ethical and responsible manner. All Doctoral and Master's Thesis students are required to take the [Responsible Conduct of Research training](#), and it is expected that students abide by the principles taught in that training while performing research for this thesis course.

Allegations of scientific or scholarly misconduct are handled in accordance with the procedures outlined by the [Policy for Responding to Allegations of Scientific or Other Scholarly Misconduct](#).

## **Additional criteria for successful completion of the course**

N/A

## **Core IMPACTS**

Not applicable.

## **Accommodations 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.

## **Expectations of Advisors and Students**

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgment, and responsibility between faculty members and the student body. [The Expectations of Advisors and Students](#) articulates 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.