

GEORGIA INSTITUTE OF TECHNOLOGY

COE 2001 STATICS

Fall 2026

Course Information

Instructor: Professor Ting Zhu (ting.zhu@me.gatech.edu)

Lectures: MW, 12:30-13:20pm, Kendeda 230

Office hours: Tuesday 4:00-5:00pm, Zoom online meeting

Course Description and Learning Outcomes

This course provides an introduction to the statics of rigid bodies, with applications to science and engineering. The course emphasizes a fundamental understanding of the basic principles of mechanics and their application to solving engineering problems. Vector analysis will be introduced as a convenient tool for solving many problems. Students will develop the ability to analyze engineering problems in a simple and logical manner and apply a few well-understood basic principles to their solutions.

Textbook

Vector Mechanics for Engineers: Statics by F. P. Beer, et al., any of the 7th to 11th Edition, McGraw-Hill

Web Resources

All handouts, homework assignments and solutions will be available on the web at <http://canvas.gatech.edu>

Problem Sets

Problem sets will be usually handed out on Wednesdays and will be due the following Wednesday. To receive credit, you must submit your solutions through Canvas by the due date. Late problem sets will not be accepted unless there is a legitimate reason (e.g., hospitalization, emergency); contact me as soon as possible to arrange a late submission.

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](#).

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 Advisees

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 [Expectations of Advisors and Advisees](#) 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.

Tests

There will be two quizzes and the final exam, respectively. These will be closed-book tests. Two-page notes (one side) and calculators are permitted.

Grading Policy

Homework	30%
Quiz 1	20%
Quiz 2	20%
Final Exam	30%

Outline

Introduction

Forces and Particle Equilibrium

Components of a Force

Equilibrium and Free-Body Diagrams

Moment of a Force and of a Couple

Cross Products

Movements, Couples, Moments about a Line

Equivalent Systems

Analysis of General Equilibrium Problems

Free-Body Diagrams

Fundamental Applications of Equilibrium Equations

Interacting Bodies or Parts of Structure

Centroids and Center of Gravity

Centroids and CG

Composite Bodies

Structural Applications

Plane Trusses

Space Trusses

Multiforce Members

Machines

Friction