COE 2001 Section C: STATICS

Fall 2026, MW 11:00 – 11:50 PM, Kendeda 210

Instructor: Prof. Edvard Bruun, edvard.bruun@ce.gatech.edu

Textbook: *Engineering Mechanics: Statics* by J.L. Meriam, L.G. Kraige, and J.N. Bolton. 9th Edition, Wiley, 2018 (Electronic or hardcover editions of the textbook are acceptable.)

WileyPLUS online system will be used for homework assignments, access our section through Canvas. You must purchase a WileyPLUS access code through the canvas page or through the bookstore.

Importance of this Course: This course is fundamental for any engineering specialization. To design a useful, safe, and efficient structure or machine, an engineer must have a strong grasp of the theory and application of statics. COE 2001 focuses on developing theoretical knowledge to solve problems in statics, while also enhancing your general engineering problem-solving skills necessary for all your future courses.

Pre-requisites: MATH 1502, MATH 15X2, MATH 1512, or MATH 1552; PHYS 2211 or 2231

Main Course Objectives:

- Visualize and model the fundamental behavior of rigid bodies.
- Sketch free-body diagrams of any object and solve the related equilibrium equations.
- Deconstruct complex engineering problems into smaller, simpler, components for static analysis in both 2D and 3D spaces.
- Apply the fundamental principles of statics to analyze various types of everyday engineering structures and machines (e.g., planar trusses, frames, beams).

Course Format:

- COE 2001C will be residential. I expect you to attend and actively participate through in-class discussion and problem-solving.
- Approximately half of each class will be dedicated to lecturing and half will be dedicated to solving problems and discussion.
- Canvas will be the website for this course. All assignments, lecture notes, and general course material will be available through Canvas.

Grading:		
	Homework (10)	20% (= 10 x 2% each)
	In-Class Quizzes (4)	80% (= 4 x 20% each)
	Final Exam (1)	40% (optional, see below)
	Extra Credit Assignments (3)	3% (= 3 x 1% each)

Your final grade will be assigned as a letter grade according to the following scale. Thresholds for letter grades may be lowered at my discretion to pick you up a letter grade if you are close to the boundary and have been actively participating in the course throughout the semester:

A	85-100%
B	75-84%
C	65-74%
D	55-64%
F	0-54%

Grade disputes must be submitted to me within two weeks of the assignment or exam being returned

Homework:

There will be 11 weekly homework assignments that must be completed and submitted through Canvas using WileyPLUS. Additionally, you need to create a PDF of your work and upload it under the corresponding "Homework #X Completion" assignment on Canvas to receive credit. Your work should be neat, concise, and clearly demonstrate your thought process.

In-Class Quizzes:

There will be four closed-book in-class quizzes. For each quiz, you may prepare one single-sided, 8.5x11" handwritten notes sheet. This sheet should contain summaries of concepts, procedures for solving problems, and equations. However, fully worked-out example problems are not allowed. If your notes sheet includes any example problems, your quiz grade will be subject to a 50% penalty. Notes sheets will be collected with your exams and returned along with your graded quizzes. You may use any calculator that does not have internet capability during the quizzes.

Final Exam:

The final exam will be comprehensive and will take place on December 5th from 2:40 to 5:30 PM in Kendeda 210 (the same classroom as the lectures). You may use two single-sided, 8.5" x 11" handwritten notes sheets. The same restrictions that apply to the midterm exam notes sheets also apply to the final exam notes sheets.

If you have a grade of C or higher (65%+) in the course before the final exam, you may choose to skip the final exam. If you qualify for this exemption, I will notify you prior to the start of the final exam period on 11/29/2025 – the weekend before the last instructional day.

If you are required to take the final exam, the final exam grade will replace the lowest two midterm exam grades (only if it is higher than the midterm grades).

Extra Credit:

Three different extra credit assignments will be posted to Canvas. Each assignment will be worth up to +1% on your final grade, for a possible total of +3% on your final grade**.** A final grade above 100% will be rounded down to 100%.

Attendance and Participation:

While there are no formal institutional requirements regarding class attendance at Georgia Tech, the resources of the Institute are provided to support your intellectual growth and development. I expect you to attend this course regularly and actively participate in in-class exercises and discussions, as these activities significantly enhance your educational experience. However, I believe that as future professional engineers, you are responsible for deciding how to allocate your time during the workday, so attendance for my course will not be monitored or policed.

Attendance is only required for the scheduled in-class quizzes (see schedule for the dates). Please let me know as soon as possible if you will a quiz for an excused absence. You can find the Institute policies for excused absences here: https://catalog.gatech.edu/rules/4/.

Illness and Extenuating Circumstances:

Your health and the health of the class are of the utmost importance to me; please stay home if you are sick. I will work with you on reasonable accommodations to make up notes, homework assignments, or exams that are missed due to illness (with a Doctor's note submitted through the appropriate Institute channels) or other extenuating circumstances.

Academic Integrity:

You are allowed—and encouraged—to collaborate with your classmates on in-class and homework assignments. Feel free to ask questions and seek guidance from me and the assistants as you work through your problem solutions. However, copying from other students or any external sources (e.g., solution manuals, third-party services, or any resources not provided by the class) is a violation of the Georgia Tech Honor Code. For information on Georgia Tech's Academic Honor Code, please visit

- http://www.catalog.gatech.edu/policies/honor-code/
- http://www.catalog.gatech.edu/rules/18/

Any student suspected of cheating or plagiarizing 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: https://osi.gatech.edu

Accommodations for Students with Disabilities:

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404) 894-2563 or http://disabilityservices.gatech.edu/, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also email me as soon as possible to set up a time to discuss your learning needs.

Diversity and Inclusion:

I believe the classroom should be a place where everyone is treated with dignity and respect. I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, abilities, and other visible and invisible differences. All class members are expected to help create a respectful, welcoming, and inclusive environment for everyone.

COE 2001C Course Topics

1. Introduction
2. 2D Force Systems
3. Free Body Diagrams
4. 2D Equilibrium
5. Vector Operations
6. 3D Force Systems
7. 3D Equilibrium
8. Plane Trusses
9. Frames and Machines
10. Centroids and Composite Bodies
11. Beams
12. Friction

COE 2001C Homework and Quiz Topics

HW #1: Introduction

HW #2: 2D Force Systems

HW #3: Free Body Diagrams/2D Equilibrium

Quiz # 1: Covers topics 1-4 and everything from HW #1 – HW #3

HW #4: Vector Operations

HW #5: 3D Force Systems

HW #6: 3D Equilibrium

Quiz #2: Covers Topics 5-7 and everything from HW #4 – HW #6

HW #7: Plane Trusses

HW #8: Frames and Machines

Quiz #3: Covers Topics 8-9 and everything from HW #7 – HW #8

HW #9: Centroids and Composite Bodies

HW #10: Beams

Quiz #4: Covers topics 10-11 and everything from HW #9 – HW #10

HW #11: Friction (optional)

Final Exam: Comprehensive (Optional for student with C and above in course)