

COE 2001 — STATICS

Section G | Fall 2026 | Georgia Institute of Technology

Course	COE 2001, Section G — Statics (CRN 90546, 2 credit hours)
Meetings	Tuesday & Thursday, 3:30–4:20 PM, MaRC Room 101
Instructor	Gyeol Han — ghan70@gatech.edu — Office: Mason 2131
Office Hours	Wednesday 5:00–6:30 PM via Zoom. Reserve a slot on the Canvas Calendar. I also stay in MaRC 101 after every class. If neither works for you, email me and we will find a time.
Graders	[TBD — names and email addresses will be posted on Canvas during Week 1]
Text	Meriam, Kraige & Bolton, Engineering Mechanics: Statics, 9th Edition, Wiley, 2018. A WileyPLUS access code is required and includes the eTextbook. Purchase through the Wiley link on our Canvas site.
Prerequisites	MATH 1502, MATH 15X2, MATH 1512, or MATH 1552; PHYS 2211 or 2231
Course Site	Canvas. All lecture videos, slides, assignments, and grades are posted there.

Why This Course Matters

Statics is one of the most important courses you will take as an engineer. Designing a structure or a machine that is useful, safe, and efficient requires an engineer who understands both the theory and the application of statics. This course is about learning concepts in order to solve real engineering problems, and about building the problem-solving habits you will use for the rest of your career.

Course Objectives

- Apply the assumptions and idealizations commonly used to analyze structures and machines.
- Visualize and model the fundamental behavior of structures and machines.
- Break complex problems into smaller, simpler components for static analysis.
- Sketch a free-body diagram of any object and solve the resulting equilibrium equations.
- Analyze trusses, frames, beams, cables, and pulleys in everyday engineering situations.

How This Course Runs

This course uses a flipped format. You meet new material at home; we use our fifty minutes together to solve problems, work with physical demonstrations, and fix the things that go wrong. Class time is where you do the engineering, not where you watch me do it.

Before Every Class

- Watch the short lecture videos listed in the Canvas.
- Read the assigned sections of the text.

Coming to class without doing this will not work. The session assumes you have already seen the material once.

During Class

- A short physical demonstration and a prediction question to open most sessions.
- A brief walkthrough of the one or two points that give people the most trouble.
- Problem solving, working in groups at your table, with a Class Session (CS) assignment submitted in WileyPLUS before you leave.

Attribution

The asynchronous lecture videos and chapter slides used in this course were developed by Prof. Don White of the School of Civil and Environmental Engineering, and are used with his permission.

Assignments

Class Session Assignments (CS)

- Completed in WileyPLUS during class and due at 4:30 PM the same day.
- Problems use the numbers printed in the textbook, so you can follow along in the book.
- Unlimited attempts before the deadline. WileyPLUS tells you whether an answer is right or wrong, but does not reveal the solution until after the deadline.
- Full solutions and additional resources unlock in WileyPLUS after the deadline passes.
- If a large share of the class cannot finish within the period, I will extend that day's deadline to midnight the following day.

Homework (HW)

- Ten assignments across the semester. Each covers the sections listed in the schedule.
- Dates in the schedule are the hard deadlines, always Sunday at 11:59 PM unless noted.
- Both parts are submitted online — the numeric answers in WileyPLUS, and a PDF scan of your written work in Canvas. Nothing is ever collected in class.
- Each student receives different numbers, so answers cannot be shared. Do your own work.
- Three attempts before the deadline.
- Half of each homework grade is the WileyPLUS score. The other half is the quality of the written work you upload as a PDF scan.

What Good Written Work Looks Like

Submit work that is neat, complete, and easy to follow. Include sketches as part of the setup and as a way of communicating your reasoning. Use a straightedge for straight lines. Write large enough to read. Every numeric answer carries its units. An answer without units is marked wrong. Up to 50 % of the grade may be deducted from work that fails to meet this standard. This is not fussiness — in professional practice, calculations that another engineer cannot check are worthless.

Quizzes and Final Exam

There are four in-class quizzes on the dates shown in the schedule. Each quiz covers only the material since the previous quiz — quizzes are not cumulative. Only the final exam is comprehensive. Quizzes are closed book and closed note, with one 8.5 × 11 in. crib sheet and a calculator allowed. Any calculator without internet access is fine; phones and tablets are not. Submit your crib sheet with your quiz paper; it will be returned to you.

A practice quiz goes up on Canvas one week before each quiz, and I hold a review session on Zoom the Monday evening before each quiz: September 21, October 12, November 2, and November 23. The session runs in three 30-minute blocks, 6:00 to 7:30 PM, one practice-quiz problem per block. Come to the blocks you want and leave when you are done; there is nothing to sign up for. Each block is recorded and posted on Canvas.

Final Assessment Policy

The final assessment for this course is a comprehensive final examination, held Tuesday, December 15, from 2:40 to 5:30 PM in MaRC 101.

The final exam counts as 2.0 times any one quiz grade. Your lowest score among the four quizzes and the final will be dropped.

- If you take only the four quizzes, each counts 20 % (80 % total).
- If you take the final and it is not your lowest score, your three highest quiz grades count 16 % each and the final counts 32 % (80 % total). If the final turns out to be your lowest score, it is dropped and each of the four quizzes counts 20 %.

This means that if you are satisfied with your grade after four quizzes, you do not have to take the final. If one quiz went badly, the final is your chance to replace it. Decide for yourself; I will ask you to indicate your intention on Canvas in early December.

Bonus Project (Optional)

After Quiz 3 I will look at which ideas this class got wrong most often and post a short list of project topics based on them. Working in teams of three or four, you will build a physical object that demonstrates one of those concepts, analyze it on paper, measure it, and explain why the measurement and the calculation disagree.

- Any materials are acceptable. Cardboard, string, wooden dowels, and a kitchen scale are enough. 3D printing is available but not required.
- Deliverables: the physical object, a free-body diagram and calculation, a comparison of measured and calculated values, and a one-page summary.
- Graded on four equal parts: free-body diagram, calculation, explanation of the discrepancy, and clarity of communication.
- Worth up to 5 percentage points added to your final grade. Choosing not to participate cannot lower your grade.
- Due Thursday, December 3.

Grading

Component	Weight
Class Session Assignments & Homework	20 %
Quizzes (4) and Final Exam — lowest score dropped	80 %
Bonus Design-and-Build Project (optional)	up to +5 %

Letter grades: $A \geq 85$, $B \geq 75$, $C \geq 65$, $D \geq 55$. Georgia Tech awards whole letter grades only; there are no plus or minus grades. If you finish close to a boundary and have participated actively throughout the semester, I will lower the bar to pick you up a letter grade.

Grade Disputes

You have two weeks from the day an assignment or quiz is returned to dispute a score. Submit disputes in writing through Canvas with a short explanation of what you believe was misgraded. Disputes are conducted cordially, and my decision is final. Note that a regrade reviews the entire problem, so a score can go down as well as up.

Course Policies

Attendance

Attendance is not graded. There is no sign-in sheet and no attendance points. What counts is the work you do in class: the CS assignment is submitted in WileyPLUS that same day, so missing a class usually means missing that CS. Because life happens, your two lowest CS scores are dropped automatically, with no note and no explanation needed. If you are ill, please stay home. If something larger comes up and you expect to miss more than two sessions, email me and we will work it out. The course follows Institute policy for excused absences (catalog.gatech.edu/rules/4/).

I photograph the board after every class and post it on Canvas, so the material is recoverable. The problem-solving practice is not, and that is what the quizzes test.

Two Schedule Notes

- Thursday, September 3: there is an 8 PM home football game and campus parking is restricted from 3 PM. Class meets in person as scheduled.
- Tuesday, December 8: I will be at a conference and will hold this session live on Zoom at our normal time.

Artificial Intelligence

You may use generative AI tools to explain concepts to yourself, to check your own reasoning after you have attempted a problem, and to help with writing. You may not use them to generate homework solutions you then copy, and you may not use them at all during quizzes or the final exam.

A practical warning: current AI tools are unreliable on statics. They confuse moments with forces, drop signs, and

produce free-body diagrams that violate equilibrium while sounding confident. If you cannot tell when the answer is wrong, the tool is not helping you. Come to office hours instead.

Mobile Devices

Laptops and tablets are welcome for working problems, viewing the eTextbook, and submitting to WileyPLUS. Please keep phones away during class unless we are using them for a poll.

Academic Integrity

You are encouraged to work together with other students on class session and homework assignments, and to ask questions of me and the course staff as you think through your solutions. Copying from other students or from any other source — solution manuals, third-party services, or any resource not provided by this class — violates the Georgia Tech Honor Code and will be treated as such. Quizzes and the final exam are individual work with no outside resources. Suspected violations are referred to the Office of Student Integrity (osi.gatech.edu).

Accommodations

Georgia Tech's disability accommodations are administered through the Office of Disability Services (disabilityservices.gatech.edu). If you have a disability, please contact that office to request accommodations, and email me as soon as possible so we can arrange what you need. Advance notice is appreciated and is your responsibility.

Student-Faculty Expectations Agreement

This course follows the Student-Faculty Expectations Agreement in the Georgia Tech Catalog (catalog.gatech.edu/rules/21/).

Your Well-Being

Statics is demanding, and a hard semester is not a character flaw. If stress, anxiety, or anything else is getting in the way of your work, the Center for Mental Health Care and Resources (mentalhealth.gatech.edu) and the Office of the Dean of Students are there for exactly that. Tell me if something is going on; you do not have to explain the details, and I would rather adjust a deadline than watch you fall behind quietly.

Diversity and Inclusion

I consider this classroom a place where you will be treated with dignity and respect. Individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities and expressions, national origins, religious affiliations, sexual orientations, and abilities are welcome here, and every member of this class is expected to help keep it that way.

Disclaimer

When necessary I reserve the right to adjust or amend the information in this syllabus. Changes will be kept to the minimum required, announced in class, and posted to Canvas.

Tentative Course Schedule

Video numbers are the streamed lecture segments on Canvas; section numbers are Meriam, Kraige & Bolton, 9th ed. CS = Class Session assignment, submitted in WileyPLUS by 4:30 PM that day. HW deadlines shown are the hard deadlines at 11:59 PM.

Wk	Date	Day	Topic and Reading	Assignments
1	8/25	T	Introduction to Statics — 1/1–1/8	CS 1
	8/27	Th	2D force systems — 2/1–2/3	CS 2 and HW1 (1/1 to 2/3) due Sun, 8/30
2	9/1	T	Moment of a force — 2/4	CS 3
	9/3	Th	Couples and resultants — 2/5–2/6 (home football game; class meets as scheduled)	CS 4 and HW2 (2/4 to 2/6) due Sun, 9/6
3	9/8	T	Free-body diagrams; 2D equilibrium — 3/1–3/3	CS 5
	9/10	Th	Constraints and static indeterminacy; 2D review — 3/3	CS 6 and HW3 (3/1 to 3/3) due Sun, 9/13
4	9/15	T	3D rectangular components — 2/7	CS 7
	9/17	Th	3D moments and couples — 2/8	CS 8 and HW4 (2/7 to 2/8) due Sun, 9/20
5	9/22	T	QUIZ 1 — Ch1, 2/1 to 2/6, 3/1 to 3/3 (2D only)	—
	9/24	Th	3D couples and resultants — 2/9	CS 9
6	9/29	T	Wrench resultants — 2/9	CS 10
	10/1	Th	3D equilibrium — 3/4	CS 11 and HW 5 (2/9, 3/4) due Sun, 10/4
7	10/6	T	FALL BREAK — no class	—
	10/8	Th	Trusses, method of joints — 4/1–4/3	CS 12 and HW6 (4/1 to 4/3) due Sun, 10/11
8	10/13	T	QUIZ 2 — 2/7 to 2/9, 3/4 (3D equilibrium)	—
	10/15	Th	Method of sections — 4/4	CS 13
9	10/20	T	Frames and machines — 4/6	CS 14
	10/22	Th	Frames and machines, problem solving — 4/6	CS 15 and HW7 (4/4, 4/6) due Sun, 10/25
10	10/27	T	Centroids by integration — 5/1–5/3	CS 16
	10/29	Th	Centroids of composite bodies — 5/4	CS 17 and HW8 (5/1 to 5/4) due Sun, 11/1
11	11/3	T	QUIZ 3 — 4/1 to 4/4, 4/6 (Trusses, Frames, Machines)	—
	11/5	Th	Beams, external effects — 5/6	CS 18
12	11/10	T	Beams, internal effects — 5/7	CS 19
	11/12	Th	Beams, V & M diagrams, graphical method — 5/7	CS 20 and HW9 (5/6, 5/7) due Sun, 11/15
13	11/17	T	V & M diagrams, Friction — 6/1–6/3	CS 21
	11/19	Th	Friction I — 6/1–6/3	CS 22 and HW10 (6/1 to 6/3) due Sun, 11/22
14	11/24	T	QUIZ 4 — 5/1–5/7 (Centroids, Beams, V&M diagrams)	—
	11/26	Th	THANKSGIVING — no class	—
15	12/1	T	Friction II — 6/1–6/3	CS 23
	12/3	Th	Problem solving	CS 24
16	12/8	T	Final exam review — held live on Zoom	—
	12/10	Th	READING PERIOD — no class	—
	12/15	T	FINAL EXAM — 2:40–5:30 PM, MaRC 101	—