

COE-2001 Syllabus

Statics, Section R, 2 Credit Hours

Spring 2027

Instructor Information

Instructor: Dr. Cedric Y. Justin

Email: cedric.justin@gatech.edu

Office: Lafayette Institute IL - 012*

General Course Information

Description

This document provides basic information regarding the Statics class for the Spring 2027 academic term at Georgia Tech Europe. The course is listed as COE-2001 for 2-credit hours in the course catalogue of the Georgia Institute of Technology. The class meets twice a week on Mondays and Wednesdays between 2pm and 2:55pm. The objective of COE2001 is to provide students with a solid foundation of mechanics principles. The class helps students develop problem-solving skills with an emphasis placed on analyzing two- and three-dimension statics problems. This includes drawing free-body diagrams, analyzing distributed loads and centroids, analyzing trusses and beams, and investigating the phenomenon of friction. The lectures supplement reading from the textbook and cover essential material. Lectures are supported by several homework assignments, which highlight how to analyze engineering problems. There are two midterms and one final exam in this course. Students should, on average, expect to spend 6 hours on homework and reading material per week. Those who are less comfortable with trigonometry and vectors should be prepared to spend more until they become comfortable with these pre-requisites.

Course Learning Outcomes

Upon successful completion of this course, students will understand the basic principles underlying the equilibrium of rigid bodies in two and three dimensions.

- Students will be able to apply fundamental rigid-body mechanics concepts to set up and solve equilibrium and force-balance problems for single and assemblies of rigid bodies
- Students will have the ability to:
 - 1) Isolate rigid bodies and draw clear and appropriate free body diagrams
 - 2) Identify appropriate supports and static knowns and unknowns, in both 2D and 3D structures
 - 3) Apply skills in mathematics and physics to solve engineering problems applied to trusses, frames and beams

Pre-requisites

Mathematics 1502 or 15X2 or 1552 or 1X52 with minimum Grade D

Physics 2211 or Physics 2231 with minimum Grade D

Topics

Forces, Moments, and Couples in 2D and 3D

Rigid Bodies in 2D, Line of Action, Concurrent Forces

Static Equilibrium in 2D of a Rigid Body, Free Body Diagrams

Resultant Forces and Moments in 2D, Static Equivalence

Plane Trusses, Method of Joints, Method of Sections

Planar Frames and Machines

Distributed Forces, Centroids

3D Static Equilibrium, 3D Trusses, Frames, and Machines

Beams, Internal Forces and Moments

Friction

Required Course Materials

Engineering Mechanics: Statics

9th Edition by Meriam, Kraige, Bolton, 2020

ISBN 13: 9781119723523

Grading Policy:

Grade in the course will be determined by mastery of the subject. The grade breakdown is given below. Points add up to a total of 100 and final grades will be assigned based on that percentage:

- A if $90 \leq \text{Totals} \leq 100$
- B if $80 \leq \text{Totals} < 90$
- C if $70 \leq \text{Totals} < 80$
- D if $60 \leq \text{Totals} < 70$
- F if $\text{Totals} < 60$

The grades of homework, quizzes, take-home exams, midterm exams, and final exams **are based on single attempts**.

Description of Graded Components:

The total percentage is made of several components:

- In-class quizzes are 30min long and assess comprehension of the reading material and attendance.
- Individual homework assignments (HWK) typically feature several problems with a mix of direct application problems and more involved problems.
- Individual take-home exams (TH) are longer and feature more applied problems.
- Midterms and final exams are closed-book and closed-notes exams. A formula sheet may be provided.

The weight of each component is given below in Table 1. Equal weight will be given for each individual assignment within each category.

Table 1: Assignments and their Weights

Three In-class Quizzes	15%
Five Individual Homework Assignments	25%
Two Individual Take-Home Exams	20%
Two Midterm Exam	20%
One Final Exam	20%

Extra Credit Opportunities

Occasionally, research questions may be brought up during class. Students who volunteer to research the question and do a short 5min presentation of their findings at the next class will be eligible for a 3% bonus of their overall grade. The instructor will also seek volunteers to participate in problem-solving exercises in class. Students who volunteer will be eligible for a 2% bonus of their overall grade. The sum of all bonuses will not exceed 10% of overall grade.

Class Website

The official class website is on CANVAS at *canvas.gatech.edu*. This website is intended to provide official lecture material, handouts, presentations, notices, and relevant information. The website is continuously updated and must be checked on a regular basis. All class announcements are automatically emailed to students' GT accounts. It is the student's responsibility to maintain access to this account and address email filtering issues. Class announcements are also made during the lectures. It is the students' responsibility to keep up with the lectures and discussions during them and not rely solely on the class website as a place for class announcements. To log in, students use their GT account username (usually their first name initial followed by the last name and a number, e.g., gburdell3) and password. Once on CANVAS, the COE2001 icon must be selected to navigate to the class website.

Office Hours

Office hours are held virtually and in-person simultaneously during the entire Spring semester on Tuesdays between 10:30am and 12:30pm. Additional office hours with teaching assistant will be scheduled as well. Physical location will be determined at the beginning of the Semester and communicated via CANVAS . When official institute holidays conflict with office hours, alternate arrangements will be made. Meetings during office hours are by appointment using Microsoft Bookings. Each appointment is 15 minutes long and students can book multiple consecutive appointments for a longer discussion.

[MS Booking Link](#)

Course Policies

Attendance and Participation

Class attendance and participation are essential for students to learn the material. This material will be foundational for their engineering careers. Attendance will be randomly checked three times during the semester during the three quizzes. Active participation during the class and volunteering to solve problems in class is encouraged (engineers often have to defend their work in front of peers during their careers so this is good practice).

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. It is the responsibility of students to become familiar with the Honor Code and be aware of rules and expectations. For any questions regarding the Honor Code, students can contact a representative of the Honor Advisory Council of the Institute. Violations to the Honor Code have serious consequences.

Collaboration

Students are expected to discuss aspects of their homework. However, the work submitted for grading must be exclusively their own.

Use of Past Student Work

For individual assignments and exams, students are not allowed to use material created by students who took COE2001 in previous years just like they are not allowed to use materials created by their current classmates. Such actions go against the nature of an individual assignment and will be treated as a violation of the Honor Code.

Use of Generative AI Tools

Students are not allowed to create text or code using generative machine learning models for any of their graded assignments. **All text turned in for grading must be students' own work, i.e., model-generated text must never be copied into documents to be turned in for grading even if edited.** Students are attending school to learn new skills and new methods, and they should focus on attaining them rather than looking for shortcuts. Any detection of auto-generated text or code will be subject to penalties in accordance with institute policies established by the Office of Student Integrity. If students have questions about legitimate uses of such tools, they must contact the instructor for clarifications.

Late Assignments and Missed Exams

Unless announced otherwise, out-of-class assignments (homework and take-home exams) must be turned in via Canvas (PDF format) as a single file. **Assignments received after they are due are late and will not be accepted.**

To maintain grading consistency and fairness, **exams will not be reaccommodated outside of exceptions made for approved Institute activities** (e.g., field trips, athletic events, conferences) and religious observances. [Read more about approved exceptions.](#) As a result, the final exam score will also count for the missed exam.

Additional Course Policies

Students may ask for a homework assignment or a test to be re-graded if they feel grading errors have been made. This request has to be made within one week of the assignment's original return date. In this case, the entire assignment will be re-graded.

No recording of any kind during the class and no phone distraction of any kind during class

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](#) guidebook articulates some basic expectations that students can have of the instructor and that the instructor has of students. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we all seek.

Tentative Class Schedule

GT-Europe official calendar is available [here](#). A tentative course schedule is given below:

Table 2: Tentative Spring 2027 Schedule

Week 01	Class 01	W. Jan 13	Lecture – Introduction
	Class 02	F. Jan 15	Lecture – Vector and Forces in 2D
Week 02	Class 03	M. Jan 18	Lecture – Forces in 2D
	Class 04	W. Jan 20	Lecture – Moments in 2D
	/	Th. Jan 21	HWK#1 due at 11:59pm
Week 03	Class 05	M. Jan 25	Lecture – Moments & Force-Couple System
	Class 06	W. Jan 27	Lecture – 2D Equilibrium
	/	Th. Jan 28	HWK#2 due at 11:59pm
Week 04	Class 07	M. Feb 1	Lecture – 2D Equilibrium & Free Body Diagrams
	Class 08.	W. Feb 3	Lecture – 2D Equilibrium & Free Body Diagrams
Week 05	Class 09	M. Feb 8	Lecture – Distributed Forces
	Class 10	W. Feb 10	Lecture – Center of Mass & Centroids
	/	Th. Feb 11	TH#1 due at 11:59pm
Week 06	Class 11	M. Feb 15	Midterm #1 Review
	Class 12	W. Feb 17	Midterm #1
Week 07	Class 13	M. Feb 22	Lecture – Two-force Members & Trusses
	Class 14	W. Feb 24	Lecture – 2D Trusses
<i>Spring Break – March 1st – March 5th</i>			
Week 08	Class 15	M. Mar 8	Lecture – 2D Trusses
	Class 16.	W. Mar 10	Lecture – Multi-force Members
	/	Th. Mar 11	HWK#3 due at 11:59pm
Week 09	Class 17	M. Mar 15	Lecture – Frames and Machines
	Class 18	W. Mar 17	Lecture – Frames and Machines
	/	Th. Mar 18	HWK#4 due at 11:59pm
Week 10	Class 19	M. Mar 22	Midterm #2 Review
	Class 20	W. Mar 24	Midterm #2
Week 11	Class 21	W. Mar 31	Lecture – Beams
	Class 22	F. Apr 2	Lecture – Shear and Bending
Week 12	Class 23	M. Apr 5	Lecture – Shear and Bending
	Class 24	W. Apr 7	Lecture – Friction
	/	Th. Apr 8	HWK#5 due at 11:59pm
Week 13	Class 25	M. Apr 12	Lecture – Friction
	Class 26.	W. Apr 14	Lecture – Friction
	/	Th. Apr 15	TH#2 due at 11:59pm
Week 14	Class 27	M. Apr 19	Lecture – Pulleys and Levers
	Class 28	W. Apr 21	Lecture – Forces and Moments in 3D
Week 15	Class 29	M. Apr 26	Lecture – 3D Equilibrium
	Reading	W. Apr 28	Reading
Week 15/16	Exam	T. Apr 29 - W. May 6	Final Exam

Campus Resources for Students

Undergraduate Student Academic Success Resources:

A list of resources for undergraduate students' academic success and information about advising can be found at [Success at Tech](#).

Students with Special Needs

Student experience in this class is important to the instructors. If students have already established accommodation with the Office of Disability Services, they are expected to communicate their approved accommodation to the instructor at their earliest convenience to discuss needs in this course.

If they have not yet established services through Disability Services but have a temporary health condition or permanent disability that requires accommodation (conditions include but not limited to mental health, attention-related, learning, vision, hearing, physical or health impacts), students should contact the Office of Disability Services at 404-894-2563 or dsinfo@gatech.edu.

Disability Services offers resources and coordinates reasonable accommodation for students with disabilities or temporary health conditions. Reasonable accommodation is established through an interactive process between the student, the instructor(s), and Disability Services. It is important to the Georgia Institute of Technology to create an inclusive and accessible learning environments consistent with federal and state laws.

Student Well-Being:

Georgia Tech understands that many students experience stress through a variety of academic, financial, and personal experiences. There are useful resources that are available to students should they need them. The well-being and mental health of students are important to the faculty and institute, and these resources are always available for students to discuss stress or similar issues. Students should feel free to contact their instructors if they feel overwhelmed by course work and the instructors will make fair arrangements to alleviate stress. There are numerous resources to support the mental health of all members of the Georgia Tech community:

- Center for Assessment, Referral and Education (CARE)
- Campus Police (any emergency): 404-894-2500
- Counseling Center: 404-894-2575

- Collegiate Recovery Program
- Stamps Psychiatry
- Vice President and Dean of Students Office and Student Referral Form
- Dean of Students Office: 404-894-6367
- Georgia Crisis and Access Line: 1-800-715-4225
- 988 Suicide & Crisis Lifeline: 988 or 1-800-273-8255 / France Number: Dial 3114
- Crisis Text Line: Text HOME to 741741
- VOICE: Victims Survivor Support: 404-894-9000
- Stamps Health Services / France SAMU: Dial 15
- Georgia Tech Mental Health Website