

CoE 2001 Statics

Instructor: Prof. Min Zhou
Email: min.zhou@gatech.edu

Prerequisites: MATH 1552 Integral Calculus (Minimum grade C) and Physics 2211 Introduction to Physics I (Minimum grade C)

Course Outcomes:

Outcome 1: Students will understand the basic principles underlying the equilibrium of rigid bodies in planar and 3D spaces.

1.1 Students will demonstrate an ability to apply fundamental rigid-body mechanics concepts to set up and solve engineering mechanics problems such as equilibrium and force-balance problems for single and assemblies of rigid bodies.

Outcome 2: Students will learn to identify, formulate, and solve engineering problems in rigid-body statics.

2.1 Students will demonstrate the ability to isolate rigid bodies and to draw clear and appropriate free body diagrams.

2.2 Students will demonstrate an ability to apply skills in mathematics and physics to solve engineering mechanics problems.

2.3 Students will demonstrate an ability to identify appropriate supports and static knowns and unknowns, in both 2D and 3D structures.

2.4 Students will demonstrate that they can apply the appropriate principles referred to in Objective 1 to the solution of problems.

Textbook: Engineering Mechanics: Statics, by James L. Meriam, 9th ed., Wiley, ebook included as part of WileyPlus access (required) via Canvas.

WileyPlus: Required for completing assignments, including ebook. To purchase, Click on “Wiley course Resources” on the left of Canvas class page. This should prompt you to set up your account (if you have never had one) and make the purchase. If you previously had a WileyPlus profile, you can use that one for the purchase. There is a 2-week free trial period before you have to pay, you can take advantage of that. You only need to do this once and can use Canvas to access homework assignments, ebook, and other WileyPlus resources afterwards. See Flyer entitled “WileyPlus registration info” for details.

Course format: On-campus in-person lectures. All assignments will be available on Canvas and submitted to Canvas.

HOURS	TOPICS	CHAPTERS
Hours	Topics	
1	Introduction: Forces (2D)	§1/2-2/2
2	Forces (2D) Components of a force Lines of Action	§2/3
6	Moment of a Force, and of a Couple; Resultants Cross Products Moments, Couples, Moments about a line Equivalent systems	§2/4-9
6	Analysis of General Equilibrium Problems Free-body Diagrams Fundamental Applications of Equilibrium Equations Interacting Bodies or Parts of a Structure	§3
8	Structural Applications & Distributed Loads Plane Trusses Space Trusses Systems Containing Multiforce Members	§4, §5
1	Centroids and Center of Gravity Centroids Method of Composite Parts	§A
2	Friction	§6
2	Midterm Exams 1 & 2	
30	Total number of hours	

Grading:

Homework:	20% (<i>one lowest score dropped automatically</i>)
Exam I:	25%
Exam II:	25%
Final exam:	30%

Expectations:

1. Students shall abide by the GT honor code for conduct;
2. Discussions on homework and class notes are encouraged. However, exchange of written information in completing assignments is not permitted;
3. No late homework will be accepted except for delays due to serious illness or other documented difficulties. Whenever possible, advance request for extension is expected. You can email the request and provide documentation when handing in the late HW;

4. The official web site for this class is the Georgia Tech Canvas site at <https://canvas.gatech.edu>. The syllabus, assignments, solutions, and handouts will be posted there.
5. Use of email for class purposes is encouraged. Students are expected to check email and the class site at least once every week.

How to do well in this course:

1. Attend classes;
2. Complete all homework assignments;
3. Make sure you understand. If not, ask questions;
4. Take advantage of office hours or separate appointments;
5. If there is a problem, talk to your professor;
6. If you are concerned about your grade, talk to your professor.