COE 3001 - Mechanics of Deformable Bodies
Fall 2026, Section A, 3 credits

Instructor

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Office Hours: By appointment. Questions can be asked on MS Teams Chat with no appointment.

Course Description

COE 3001 is an undergraduate course on the mechanics of deformable solids. The primary goal of the course is to provide students with the skills required to analyze stress, strain, stress-strain relations, deflections, and failure in deformable solids.

This is one of the most important courses for future engineers. Designing a useful, safe, and efficient structure, system, or machine requires an engineer who has a mastery of the theory and application of the mechanics of materials.

Course Learning Outcomes

- To develop an ability to visualize and understand the fundamental behavior of structures and solids
- To develop an understanding of assumptions and idealizations commonly used for analysis of structures and solids
- To learn methods of computing stresses in several types of structural and machine components
- To learn the fundamental approach for determining internal forces and stresses in indeterminate structures: use of equations of equilibrium, force-temperature-deformation relations, and expressions for the geometry of the deformations
- To develop a basic knowledge of approaches to design of structural and machine components

Pre-requisites/Co-requisites

COE 2001 Statics and MATH 2403, 2413 or 24X3.

Textbook

Mechanics of Materials, James M. Gere and Barry J. Goodno, Cengage

Website

The website for the course is https://canvas.gatech.edu. Students are expected to check regularly for announcements and are responsible for the material posted. Example problems and material from the lectures are posted regularly.

Grading Policy

Final grades will be determined from the higher of two grading schemes. Students that choose Grading Scheme 1 may elect not to take the final exam.

Grading Scheme 1
- Statics Quiz (5%)
- Homework (15%)
- Exams (80%)

Grading Scheme 2
- Statics Quiz (5%)
- Homework (15%)
- Final (80%)

Assignment of letter grades will be made using the scale below. Grades will be rounded to the nearest 0.1%. Students should not expect the grades to be curved.

$\geq$ 90.0% = A
80.0% - 89.9% = B
70.0% - 79.9% = C
60.0% - 69.9% = D
$\leq$ 59.9% = F

Statics Quiz

An in-person quiz will be given within the first three weeks of the semester. The quiz is closed-book and closed notes. The quiz will consist of one problem to assess the student's ability to calculate the reactions on a structure.

Homeworks

Due dates for each homework are given on the course schedule on Canvas. Homework shall be submitted online by 5:00 pm on the due date, through Canvas "Assignments" function. Students needing extra-time must ask permission from the TA before the deadline to submit late. If granted, the student should put a note in the comments section of that assignment on Canvas. Late homework will not be accepted without permission.

Working in group on homework is allowed (and encouraged). However, each student must write up and turn in their own solutions. Any student suspected of cheating or plagiarizing on an assignment will be reported to the Office of Student Integrity. This includes using any solution manual, using online solutions, solutions from former students, or solutions generated with AI tools.

Exams

Four exams will be given during the semester (see schedule on Canvas). All exams are closed book, closed notes, and in-class. The course equation sheet will be provided. You may use a calculator.

Final

A final exams will be cumulative and given during the time assigned by the Institute. The final is closed book, closed notes, and in-class. The course equation sheet will be provided. You may use a calculator.

Academic Integrity

The Georgia Tech Honor Code is the standard of conduct for this course. The Honor Code is available at http://www.honor.gatech.edu/. You are allowed to work in groups on all homework, but any work you turn in must be written in your own hand and cannot be a direct copy of any other student's work, online solution manuals, or AI. Exams are to be your own work.

Cheating off of another student's exam is unethical and unacceptable. Cheating is a direct violation of the GT Academic Honor Code, and will be dealt with accordingly per Georgia Tech policy. Other examples of cheating include, but are not limited to, bringing unauthorized material to exam, collaborating or sharing notes, talking during exam and using cellphones. 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.

Attendance

In the event of a medical emergency or an illness that is severe enough to require medical attention, students are responsible for contacting the Office of the Dean of Students as soon as possible to report the medical issue or emergency, providing dated documentation from a medical professional and requesting assistance in notifying their instructors. The medical documentation will be handled confidentially within the Dean of Students Office and will inform a decision as to whether communication with instructional faculty is appropriate. It is the expectation of the Institute that instructional faculty will honor a request from the Office of the Dean of Students to excuse a medical emergency or illness and allow make up of the work missed, including homeworks, quizzes, presentations, examinations, or other class assignments. All other Georgia Tech approved absences will be honored per the appropriate policy.

Accommodations for Students with Disabilities

The Georgia Institute of Technology has policies regarding disability accommodation, which are administered through The Office of Disability Services. http://disabilityservices.gatech.edu/. For students with disabilities, please contact this Office to request classroom accommodations. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

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 articulate 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.