COE3001 – Fall 2026
Mechanics of deformable bodies
Tuesdays, Thursdays @ 3:30-4:45 PM

Course objectives: This course provides a foundational introduction to the mechanics of materials. It focuses on understanding how stress and strain develop within a material subjected to external loads. These principles are then applied to the main types of loading found in structural elements, including tension, compression, torsion, bending and buckling. Students will draw on their knowledge of statics and mathematics to solve practical problems, with particular attention to structural analysis (determining maximum allowable loads), design (selecting appropriate materials) and optimization (improving geometric efficiency).

Course contents: This is a tentative outline of the course contents. It may evolve during the semester.

- Chapter #0: Introduction
- Chapter #1: Strength of materials
- Chapter #2: Traction and compression
- Chapter #3: Shear
- Chapter #4: Torsion
- Chapter #5: Bending
- Chapter #6: Buckling
- Chapter #7: Principle of superposition and static indeterminacy
- Chapter #8: Stress concentration

Instructor:

Prof. Antoine GUITTON,
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Office Hours: My minimal office hours are on Tuesdays from 2:00-3:30 PM and from 4:45-5:45 PM.

Email Policy: You must use your Georgia Tech issued email address. Email originating from outside the Georgia Tech network may be ignored to protect your personal information and comply with Georgia Tech policies.

Textbook: This textbook is suggested as further readings. Note that it does not replace an active participation during lectures.

- James M. Gere & Barry J. Goodno, Mechanics of Materials, Cengage Learning, Ninth Edition, SI..

Course Website: My personal webpage (www.antoine-guitton.fr) will be used to post the course syllabus, lecture notes, homework, and homework-solutions.

Exams: All exams will be closed book. However, one personal formula sheet, consisting of one A4 sheet with two pages of content, will be allowed. Your grade in the course will be determined based on your performance on two written partial exams, and one final exam:

- The partial exams (60 minutes long, 16.5% each) will be held during the regular meeting time of the class.
- The final exam (2 hours 50 minutes, 66%) covering all course content and will be administered during the final exam period at the time and location set by the administration.

Grading: Grades are expressed as percentages and converted into letter grades according to the following scale:

- A: 80–100 %
- B: 70–79 %
- C: 60–69 %
- D: 50–59 %
- F: below 50 %

This grading scale may be adjusted by the instructor if a grading curve is applied.

Homework: Homework is not to be turned-in, and you are responsible for using the provided solutions to gauge your understanding of the material. Students are strongly encouraged to work on the homework. Neglecting the homework will likely jeopardize your performance in the class. Students are allowed/encouraged to study together (including working together on the homework assignments). You can ask question regarding your homework, although you should try to think about the problems before asking me. Note that some problems can be corrected during the lectures.

Make up policy: Those with Institute sanctioned activity excuses will be allowed to take missed examens, per Institute policy. Make-up exams will only be permitted when absences are due to legitimate reasons. In any case, you must contact me in advance of the test in writing (email is fine) to schedule a make-up exam. If you do not contact me in advance, it may not be possible to schedule a make-up test. Whenever possible, make-ups will be administered during the week following the scheduled date of the exam. Make-up exams may be different from those administered during the regular examination period.

Extenuating circumstances: Please be sure to meet with the Dean of Students if you encounter extenuating circumstances that interfere with your ability to attend class and/or prepare for exams. The Dean's office is your best resource when you would prefer to not discuss the details of your personal situation.

Grade Accuracy: *Errare humanum est*. Errors in grading and/or recording of scores for exams must be addressed within seven days of posting by contacting me in writing via email. Disputes after this one-week period will not be considered. Note that I will not be returning exams during class. However, you may access your own exam during my office hours by scheduling an appointment with me through email. Note also, that grades may be curved at the instructor's discretion.

Academic Integrity: All students in this class are expected to respect the *Georgia Tech honor code* and behave in a professional manner when it comes to academic integrity. Any students violating the honor code or suspected of academic misconduct will be turned over to the office of Academic Integrity, Dean of Students to investigate the incident(s). Cheating off of another person's test is unethical and unacceptable. Cheating off of anyone else's work is a direct violation of the GT Academic Honor Code and will be dealt with accordingly.

Electronic Devices: The only electronic device that you may use during an exam is a commercially available calculator that cannot communicate with other devices without a direct physical connection (i.e., no wireless, IR or other communication capabilities). Programmable and graphing calculators are allowed, but their memories should be appropriately cleared. Your use of a calculator should be consistent with the class policy that reference materials of any kind are *not permitted* on exams. The use of any mobile/wireless communication device (smart watch, cell phone, smart phone, etc.) in any way, shape, or form during an exam is strictly forbidden. Please be sure to put away your cell phones and watches before the exam begins. If you have *any* electronic device available/in your possession during an exam, you will be considered in violation of the academic integrity policy and referred to the office of Academic Integrity. All electronic devices must be placed inside of and remain in a closed bag, purse, or backpack during exams. Sharing or passing of calculators is also strictly forbidden: all persons involved in the sharing or passing will be in violation of the academic integrity policy and referred to the office of Academic Integrity.

Word: Use of any previous semester course materials is allowed for this course; however, I remind you that while they may serve as examples for you, they are not guidelines for any tests, exams, homework, or any other coursework that may be assigned during the semester.

Special needs: The Georgia Institute of Technology encourages qualified persons with disabilities to participate in its programs and activities. If you anticipate needing any type of accommodation in this course or have questions about physical access, please tell me as soon as possible.