

GEORGIA TECH LORRAINE

GEORGIA INSTITUTE OF TECHNOLOGY

The George W. Woodruff School of Mechanical Engineering

COE-3001-R: Mechanics of Deformable Bodies

Course objective: The course introduces elementary notions in mechanics of materials. The definition of strain and stress states in a loaded material is the major concept introduced. It is applied to elementary loading modes existing in structural members (tension, compression, torsion, bending and buckling). The students will apply their skills in statics and mathematics to solve various problems, with focus on structural analysis (i.e. maximum admissible loads), design (i.e. choice of materials) and optimization (i.e. geometry).

Expected Course outline:

- Introduction to stresses and strains
- Axially loaded members
- Torsion
- Bending
- Analysis of stresses and strains
- Plane stress
- Deflection in beams
- Statically indeterminate beams
- Buckling

Lectures: In-class lectures are ~1:15 hour long. Classes will not be recorded.

Instructor: Dr. Taupin Vincent, CNRS research scientist.

Phone GTL: to be defined / Office GTL: to be defined

Phone LEM3: +33(0)372747827 / Office LEM3: Room DN3-027

Email: vincent.taupin@cnr.fr

Office hours: TBD. Students can also ask to meet the instructor after class. Students are also encouraged to ask whenever needed for in-person/virtual appointments at any date through e-mail.

Course prerequisite: COE 2001 Statics

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

Grading: Your grade will be determined using the following weighting:

| | |
|------------|-----|
| Homework | 20% |
| Test # 1 | 20% |
| Test # 2 | 20% |
| Final Test | 40% |

Grading Scale

Your final grade will be assigned as a letter grade according to the following scale:

| | |
|---|---------|
| A | 90-100% |
| B | 80-89% |
| C | 70-79% |
| D | 60-69% |
| F | 0-59% |

Important dates: A tentative calendar is

| | |
|----------|-------------------------|
| Test # 1 | ~ 1 st month |
| Test # 2 | ~ 3 rd month |

The dates of tests #1 #2 will be confirmed 2 weeks in advance, exception from students requesting special treatment is not accepted.

Homework will be graded and no late assignment will be accepted. Unless specifically identified as group work, exams, projects and homework are to be completed alone.

Students are strongly encouraged you to work on extra problems from the textbook.

Major Emergencies: If students have some sort of major life emergency - serious illness or injury, death in the family, etc. - that seriously impedes their progress in the class, they should inform the instructor as soon as possible so as to find adapted solutions.

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. For information on Georgia Tech's Academic Honor Code, please visit <http://www.catalog.gatech.edu/policies/honor-code/> or <http://www.catalog.gatech.edu/rules/18/>.

Any student suspected of cheating or plagiarizing 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.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404)894-2563 or <http://disabilityservices.gatech.edu/>, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.