

Mechanics of Deformable Bodies

COE3001, Section L

Syllabus

Instructor: Susan N. Thomas
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Grader: TBA
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Teaching Assistant: TBA
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Course meetings:
T, Th 9:30-10:45am
Skiles 168

Office hours*:
Grader: TBA
Shell tutoring: TBA
Teaching Assistant: TBA
Dr. Thomas: TBA

Grading:
Homework: 10%

- Homework sets will be posted on Canvas each week. 11 homework sets will be assigned during the term.
- Homework is due every week at beginning of class. Homework will be turned in electronically.
- Each student's lowest homework grade will be dropped if 80% or more of students in the class complete the end of semester survey.

Exam 1 (Midterm): 30%
October 14, in class

Exam 2 (Midterm): 30%
November 25, in class

Exam 3 (Final): 30%
Final Exam slot: December 14, 8:00am - 10:50am

Academic Honor Code:
Full compliance with GT Academic Honor Code (www.honor.gatech.edu) is expected and required.

Textbook references:
Gere and Goodno, Mechanics of Materials. Cengage Learning.

****Note:** All students must take the exams at the designated times to pass the course – there are no “make-up” exams. However, the 90% of the course grade that is comprised of the composite exam scores (e.g., non-homework grades) can consist of a) only the first two midterms, b) all three exams (e.g., two midterms plus the final), or c) only the final exam. This means that strong performances on exams 1 and 2 allow student can take that grade as their total exam score and not take the final. Alternatively, a strong performance on the final exam can override weaker performances on earlier exams (e.g., your final exam score counts as your composite exam score). Or two widely differing midterm scores can be improved by taking the final. Take home message – show me you learned the material and that is the exam grade you get! Final grades will be assigned based on a conventional scale: A, 90-100; B, 80-89; C, 70-79; D, 60-69; F, <60.

*Note: Office hours may be rescheduled. The syllabus may be updated. Pace of course content may be adapted. Changes will be announced in class and on Canvas.

#	Week	Day	Date	Topic	Comments	Section Gere	Section Beer
1	1	T	8/18	Introduction; Stress on axially loaded members; Tension, compression		1.1-1.3	1.1-1.2
2		R	8/20	Normal, shear stress; Bars with intermediate axial loads	Assign	1.4; 1.6; 1.8	1.3; 1.7
3	2	T	8/25	Stress and strain on axially loaded members; Mechanical properties of materials		1.4-1.6; 1.9-1.10	1.4-1.9; 2.1-2.3
4		R	8/27	Poisson ratio; Hooke's law for multiaxial loading	HW 1 due Assign	1.7-1.8	1.6
5	3	T	9/1	Thermal strain; Deformation of axial loaded members		2.5; 2.1-2.3	2.3; 2.5
6		R	9/3	Bars with continuously varying loads or dimensions	HW 2 due Assign	2.5; 2.1-2.3	2.3; 2.5
7	4	T	9/8	Statically indeterminate structures		2.4; 2.7	2.4; 2.7
8		R	9/10	Torsional deformations and shear stress and strain	HW 3 due		
9	5	T	9/15	Nonuniform torsion; Statically indeterminate torsion		3.1-3.3	3.1-3.3; 3.5
10		R	9/17	Review		3.1-3.4	3.1-3.3; 3.5
11	6	T	9/22	Midterm		3.8	3.8
12		R	9/24	Infinitesimal volume; Plane stress;	Assign	7.3	7.1 - 7.3
13	7	T	9/29	Normal stress transformations for rotated planes; Principal stresses		7.3	7.1 - 7.3
14		R	10/1	Maximum shear stress	HW 4 due Assign	7.3	7.1 - 7.3
	8	T	10/6	FALL BREAK – No class			
15		R	10/8	Mohr's circle			
16	9	T	10/13	Pressure vessels	HW 5 due Assign	8.1-8.3	8.1-8.3

17		R	10/15	Shear force and bending moments		4.1-4.3; 4.5	4.1-4.3
18	10	T	10/20	Relationships between q , V and M	HW 6 due Assign	4.4-4.5	4.4-4.5
19		R	10/22	Pure bending of beams; Bending stress and strain			
20	11	T	10/27	Moment curvature equation and the flexure formula	HW 8 due Assign	5.1-5.5	5.1-5.5
21		R	10/29	Parallel axis theorem; Design of beams for bending and shear stress		5.5; 5.6	12.5; 5.6
22	12	T	11/3	Shear stress calculations	HW 9 due Assign	5.8-5.10	5.8; 5.10
23		R	11/5	Design of beams for bending and shear stress		5.8-5.10	5.8; 5.10
24	13	T	11/10	Differential equation of the deflection curve	HW 10 due Assign	9.1-9.4	9.1-9.4
25		R	11/12	Differential equation of the deflection curve		9.1-9.4	9.1-9.4
26	14	T	11/17	Statically indeterminate beams		10.1-10.3	10.1-10.3
27		R	11/19	Review	HW 11 due		
28	15	T	11/24	MIDTERM			
		R	11/26	THANKSGIVING – No class			
29	16	T	12/1	Review			
	Final	R	12/14	Final Exam 8:00-10:50am			