

COURSE SYLLABUS

ENGR 2332 Mechanics of Materials

COURSE INFORMATION

Credit Hours: 3

Term: Spring 2026

Time: Lecture: Tue/Thu 10-11:20 AM

Classroom: E265

INSTRUCTOR INFORMATION

Name: Salar Shirkhanloo, Ph.D., PE

Office: Discovery Park F115T

Office Hours: Mo/Wed 11-12

Email: Salar.shirkhanloo@unt.edu

Teaching Assistant:

Nipa, Lutfun

LutfunNipa@my.unt.edu

COMMUNICATION EXPECTATIONS

- You can communicate with your instructor via email any time. Emails will be answered within 48 hours.
- Grades, PowerPoint files and announcements will be posted in Canvas.
- Homework will be assigned on WileyPlus platform (usually every Thursday).

COURSE DESCRIPTION

Relationships among loads placed on structural components; shape and size of components; resultant stresses, strains and deflections of components.

COURSE STRUCTURE

. Course format and content delivery: face-to-face

COURSE PREREQUISITE

MEEN 2301/ENGR 2301 with a grade of C or better.

COURSE OBJECTIVES

By the end of the course, you will be able to:

1. Understand the concepts of stress and strains, and the influence of loading direction on deformation.
2. Understand the impact of applied loads on design.
3. Know the final extensions on axially loaded members subjected to tensile or thermal stresses.
4. Understand the influence of torsional stresses on deformation of circular bars.
5. Understand shear force and bending moments diagrams.
6. Understand the principal stress based on applied loads.
7. Understand the influence of location of loads on deflection.
8. Understand the effects of end conditions on deformation.

STUDENT LEARNING OUTCOME

- a) Calculate stress-strains relations for typical engineering applications. (1, 2, 3, 7, 8)
- b) Analyze tensile loading of members. (1, 2, 3)
- c) Analyze torsion in beams. (1, 2, 4)
- d) Analyze beams in deflection. (1, 5, 7)
- e) Calculate principal stresses and angular dependence of stress. (6)
- f) Evaluate buckling of columns. (1, 6)
- g) Analyze columns under compression. (8)

MATERIALS

Required Textbook

1. **(Main)** Hibbeler, R.C, Statics and Mechanics of Materials, 5th Edition, Pearson 2017, ISBN-10: 1-13-34392361, ISBN-13: 9780134392363 or 10: 0134392361
2. Philpot, Timothy A., Mechanics of Materials: An Integrated Learning System, 4th Edition, Publisher: Wiley.

MINIMUM TECHNOLOGY REQUIREMENTS

- Computer
- Reliable internet access
- [Canvas Technical Requirements](https://clear.unt.edu/supported-technologies/canvas/requirements) (https://clear.unt.edu/supported-technologies/canvas/requirements)

COMPUTER SKILLS & DIGITAL LITERACY

- Using Canvas
- Using email with attachments

TECHNICAL ASSISTANCE

Here at UNT we have a Student Help Desk that you can contact for help with Canvas or other technology issues. UIT Help Desk: [UIT Student Help Desk site](http://www.unt.edu/helpdesk/index.htm) (http://www.unt.edu/helpdesk/index.htm)
Email: helpdesk@unt.edu , Phone: 940-565-2324

COURSE EVALUATION

Student Perceptions of Teaching (SPOT) is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course. Please don't forget to submit the course evaluation when the link is sent to you in November.

TENTATIVE COURSE OUTLINE

The course outline may be subjected to modifications with notice.

Week	Date	Topic	Book Chapter
1		Introduction, Normal, Shear and Bearing Stress	7
		Introduction, Normal, Shear and Bearing Stress	7
2		Martin Luther King Jr. Holiday	
		Deformation and Strain	7
3		Deformation and Strain	7
		Mechanical Properties of Materials	8
4		Mechanical Properties of Materials	8
		Axial Deformation	9
5		Axial Deformation	9
		Axial Deformation	9
6		review	
	2/19	Exam 1	
7		Torsion	10
		Torsion	10
8		Torsion	10
		Bending	11
9		Spring Break	
		Spring Break	
10		Bending	11
		Bending	11
11		Shear Stress in Beams	12
		Shear Stress in Beams	12
12		review	
	4/2	Exam 2	
13		Beam Deflections	16
		Beam Deflections	16
14		Strain Transformation	14
		Stress Transformation	14
15		Columns	17
		review	
16		Exam 3	
	4/30		
		Final Exam (date: according to UNT's final exams schedule)	

COURSE REQUIREMENTS

Exams

Exams will be based on the textbook, handouts, class exercises, homework, class lectures and class discussions. Students are responsible for all text material, regardless of whether we review the text material in class or not.

Missed Exams: You will be allowed to make up missed exams only if you have a documented university excused absence. Make-up exams may not be the same as the original.

Homework

Late Homework: It is the students' responsibility to submit all assignments in time. Homework cannot be accepted late.

GRADING

Homeworks	25
Midterm exam 1	15
Midterm exam 2	15
Midterm exam 3	15
Final Exam	30
Total	100%

GRADE DISTRIBUTION

90 – 100 and higher	A
80-89	B
70-79	C
60-69	D
Below 60	F

Extra credit (attendance): Attendance will be taken randomly 10 times during the semester. Each attendance is worth 0.5%, for a maximum of 5% extra credit added on top of the total course grade.