

MEEN 2332.001 Mechanics III

Instructor Contact

Name: Nandika Anne D'Souza

Phone Number: 940-565-2979

Office Hours: 9-10 am; Monday and Wednesday

Class: 11 to 12:30

Zoom for class: 844-8565-2474

Piazza for discussion: piazza.com/unt/spring2021/meen2332001

Email: ndsouza@unt.edu

Communication Expectations:

I will use the piazza platform in canvas to discuss the class. The setting is set to anonymous and students, TA's, graders or I can respond.

If you need to reach me related to a personal, medical or family situation impacting your learning experience please reach me by email and we can schedule a conversation.

I will provide a few Qualtrics survey links that I will disseminate to the class via an announcement.

Course Description

Basic concepts of stress and strains. The influence of loading direction and location on the deformation of structures. Understand the impact of loads on designs. Understand failure criteria for designs.

Course Structure

The course will be offered via an online delivery option using zoom and canvas.

Course Prerequisites or Other Restrictions

MEEN 2301: Statics with a grade of C or better.

Course Objectives

Add course level objectives here. For a quick overview of how to write measurable learning objectives, please see the Carnegie Mellon University resource "[Articulate Your Learning Objectives](https://www.cmu.edu/teaching/design/teach/design/learningobjectives.html)" (<https://www.cmu.edu/teaching/design/teach/design/learningobjectives.html>). Please see the suggested format below.

By the end of this course, students 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 moment diagrams.
6. Understand the principal stress based on applied loads.
7. Understand the influence of location of loads on the deflection.
8. Understand failure criterion for designs

Materials

- REQUIRED TEXT: Mechanics of Materials, 10th Ed., Hibbeler, Pearson ISBN-13: 9780134319650

Teaching Philosophy

Mechanics III which comprises how forces and moments result in stresses and strains relates to the material properties. The course has a considerable amount of new information that once understood becomes an intuitive way of reasoning. The course is pivotal to machine design and advanced structural analysis. My teaching philosophy is thus focused on ensuring all learning outcomes are understood. I utilize many active learning practices so having a notebook, calculator and writing utensils for each class period is very important. You will typically listen, see a solved problem that I do and then solve the underlying concept yourself. The homework will be closely related to these concepts and I provide longer problems as movies on canvas to help you see a solution should you want to. I break the class into 4 segments.

In the first segment you will recapture what you know in statics and taking a spring $F=kx$ further you capture an understanding of stresses and strain. More importantly you learn that the direction of the force with relationship to the surface it is being applied to results in different types of forces. We'll segmentally look at designs that use forces perpendicular and parallel first, *then we will look at twisting torques* and *then beams in bending*. Once you do these 3 segments you work on understanding combinations of these.

Technical Requirements & Skills

Minimum Technology Requirements

- Computer
- Reliable internet access
- Speakers
- Microphone
- Plug-ins
- Microsoft Office Suite
- [Canvas Technical Requirements \(https://clear.unt.edu/supported-technologies/canvas/requirements\)](https://clear.unt.edu/supported-technologies/canvas/requirements)
- Scanning ability
- Calculator allowed (based on FE exam) : <https://ncees.org/exams/calculator/>
 - Casio: All fx-115 and fx-991 models (Any Casio calculator must have "fx-115" or "fx-991" in its model name.)
 - Hewlett Packard: The HP 33s and HP 35s models, but no others

- Texas Instruments: All TI-30X and TI-36X models (Any Texas Instruments calculator must have “TI-30X” or “TI-36X” in its model name.)

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Computer Skills & Digital Literacy

- Using Canvas
- Using email with attachments
- Downloading and installing software
- Using spreadsheet programs
- Using a scientific calculator

Rules of Engagement

Honesty and learning (academic integrity):

- I encourage discussion in daily concept checks that will occur each class period.
- I encourage discussion in doing your assignments. I am aware that solutions to problems are available. I encourage you not to use them when you first get an assignment but attempt problems by yourself and seek them more as an aid when stuck. I encourage using the piazza platform where I will respond.
- The quizzes and exams will be done with respondus lock down browser. I will provide all equations and you will have only your calculator, writing utensils, blank paper to work through problems, computer to submit your work through canvas. You should keep your cell phone and all other electronic devices powered off. I cannot emphasize more that the learning from this class is very valuable to mechanical design. As such truly learn and measure your knowledge by being honest in how you do your work.

Communication:

- Treat your instructor and classmates with respect in email or any other communication.
- Always use your professors’ proper title: Dr. or Prof., or if in doubt use Mr. or Ms.
- Unless specifically invited, don’t refer to your instructor by first name.
- Be careful with personal information (both yours and other’s).
- Do not send confidential information via e-mail

- This term we will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. If you have any problems or feedback for the developers, email team@piazza.com.

Find our class signup link at: piazza.com/unt/spring2021/meen2332001

Success in an Online Course

- When you are in the zoom class turn you phone, TV and other distractions off.
- Find a space to be focused.

[“How to Succeed as an Online Student”](https://clear.unt.edu/teaching-resources/online-teaching/succeed-online) (<https://clear.unt.edu/teaching-resources/online-teaching/succeed-online>).

Getting Help

Technical Assistance

Part of working in the online environment involves dealing with the inconveniences and frustration that can arise when technology breaks down or does not perform as expected. 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

In Person: Sage Hall, Room 130

Walk-In Availability: 8am-9pm

Telephone Availability:

- Sunday: noon-midnight
- Monday-Thursday: 8am-midnight
- Friday: 8am-8pm
- Saturday: 9am-5pm

Laptop Checkout: 8am-7pm

For additional support, visit [Canvas Technical Help](https://community.canvaslms.com/docs/DOC-10554-4212710328) (<https://community.canvaslms.com/docs/DOC-10554-4212710328>)

Student Support Services

UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

- [Student Health and Wellness Center](https://studentaffairs.unt.edu/student-health-and-wellness-center) (<https://studentaffairs.unt.edu/student-health-and-wellness-center>)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services) (<https://studentaffairs.unt.edu/counseling-and-testing-services>)
- [UNT Care Team](https://studentaffairs.unt.edu/care) (<https://studentaffairs.unt.edu/care>)
- [UNT Psychiatric Services](https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry) (<https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry>)
- [Individual Counseling](https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling) (<https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling>)

Other student support services offered by UNT include

- [Registrar](https://registrar.unt.edu/registration) (<https://registrar.unt.edu/registration>)
- [Financial Aid](https://financialaid.unt.edu/) (<https://financialaid.unt.edu/>)
- [Student Legal Services](https://studentaffairs.unt.edu/student-legal-services) (<https://studentaffairs.unt.edu/student-legal-services>)
- [Career Center](https://studentaffairs.unt.edu/career-center) (<https://studentaffairs.unt.edu/career-center>)
- [Multicultural Center](https://edo.unt.edu/multicultural-center) (<https://edo.unt.edu/multicultural-center>)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services) (<https://studentaffairs.unt.edu/counseling-and-testing-services>)
- [Pride Alliance](https://edo.unt.edu/pridealliance) (<https://edo.unt.edu/pridealliance>)
- [UNT Food Pantry](https://deanofstudents.unt.edu/resources/food-pantry) (<https://deanofstudents.unt.edu/resources/food-pantry>)

Academic Support Services

- [Academic Resource Center](https://clear.unt.edu/canvas/student-resources) (https://clear.unt.edu/canvas/student-resources)
- [Academic Success Center](https://success.unt.edu/asc) (https://success.unt.edu/asc)
- [UNT Libraries](https://library.unt.edu/) (https://library.unt.edu/)
- [Writing Lab](http://writingcenter.unt.edu/) (http://writingcenter.unt.edu/)
- [MathLab](https://math.unt.edu/mathlab) (https://math.unt.edu/mathlab)

Course Requirements

Homeworks are due at 10 am on the day they are due. Concept checks are due by midnight of the class day. Quizzes and exams are due by 10 pm on the day they are offered.

Concept checks	Average 3 per class period	10%
Homeworks	10	10%
Weekly quizzes	10	10%
Exam1	Chapter 1-3	15%
Exam2	Chapter 4-5	15%
Exam3	Chapter 6, 7	15%
Comprehensive Final	Chapter 1-10, 12	25%

Grading

Expected Grade Distribution:

≥ 90 grade points = A

≥ 80 and < 90 grade points = B

≥ 70 and < 80 grade points = C

≥ 60 and < 80 grade points = D

< 60 grade points = F

Grading basis

Concept quizzes: an attempt that reflects a sincere attempt at the solution will receive full points. An attempt that does not show work will be graded at 50%

Quizzes/exams: Problems should be solved comprehensively providing all the work in the uploaded file to support the submission on canvas. The solution should be numerically accurate to get full points. If the initial set up is wrong the problem will receive zero points even if there is substantial work. Having a fundamental error in the concept that is required for the problem will receive a zero. If the set up of the problem is right but there is a calculation error the work will be graded as partial credit.

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.

Course Policies

Assignment Policy

All assignments and due dates will be in canvas. The assignment and quiz will be in the chapter module that they relate to. You should review your calendar to know assignment, homework and quiz dates.

The University is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will extend the time windows and provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and contact the UNT Student Help Desk: helpdesk@unt.edu or 940.565.2324 and obtain a ticket number. The instructor and the UNT Student Help Desk will work with the student to resolve any issues at the earliest possible time.

Examination Policy

Exams are closed notes, closed book. I provide all equations required. The equation package is available in canvas for you to use when doing homeworks and preparing for tests. You should attempt the quiz and exam earlier in the day so you can accommodate various technical difficulties that may be unforeseen. There is no make up option for assignments, quizzes or exams not completed on the due date that are not a result of a personal, medical or family life situation.

Instructor Responsibilities and Feedback

Grades are assigned a week from when the assignment is completed. Solutions will be posted for all homeworks, quizzes and exams ahead of grades being posted to help you prepare for exams.

Late Work

Late submissions receive a zero.

Attendance Policy

I require attendance in class and participation in the real time concept checks. Should you have technical challenges that impact you please contact me so I can work out a mechanism for you to engage.

State your attendance policy. An attendance policy is required for every UNT syllabi. Visit the [University of North Texas' Attendance Policy](http://policy.unt.edu/policy/15-2-) (<http://policy.unt.edu/policy/15-2->) to learn more.

Class Participation

Include your classroom participation policy here.

Syllabus Change Policy

Provide information as to policies regarding changes to the syllabus, course information, due dates.

UNT Policies

Academic Integrity Policy

Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition

to expulsion from the University. A finding of academic integrity violation during quizzes and exams will result in a zero for that exam. If a finding is determined twice, a grade of F will be assigned for the class.

ADA Policy

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the [ODA website](https://disability.unt.edu/) (<https://disability.unt.edu/>).

Emergency Notification & Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.

Retention of Student Records

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student's records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University's policy. See UNT Policy 10.10, Records Management and Retention for additional information.

Acceptable Student Behavior

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. Visit UNT's [Code of Student Conduct](https://deanofstudents.unt.edu/conduct) (<https://deanofstudents.unt.edu/conduct>) to learn more.

Access to Information - Eagle Connect

Students' access point for business and academic services at UNT is located at: my.unt.edu. All official communication from the University will be delivered to a student's Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail [Eagle Connect](https://it.unt.edu/eagleconnect) (<https://it.unt.edu/eagleconnect>).

Student Evaluation Administration Dates

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15] of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the [SPOT website](http://spot.unt.edu/) (<http://spot.unt.edu/>) or email spot@unt.edu.

Sexual Assault Prevention

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT's Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim's compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565- 2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

Important Notice for F-1 Students taking Distance Education Courses

Federal Regulation

To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the [Electronic Code of Federal Regulations website](http://www.ecfr.gov/) (<http://www.ecfr.gov/>). The specific portion concerning distance education courses is located at Title 8 CFR 214.2 Paragraph (f)(6)(i)(G).

The paragraph reads:

(G) For F-1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken on-line or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to completion of the class. An on-line or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F-1 student's course of study is in a language study program, no on-line or distance education classes may be considered to count toward a student's full course of study requirement.

University of North Texas Compliance

To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experience integral to the completion of this course.

If such an on-campus activity is required, it is the student's responsibility to do the following:

(1) Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course.

(2) Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISSS has a form available that you may use for this purpose.

Because the decision may have serious immigration consequences, if an F-1 student is unsure about his or her need to participate in an on-campus experiential component for this course, s/he should contact the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email internationaladvising@unt.edu) to get clarification before the one-week deadline.

Student Verification

UNT takes measures to protect the integrity of educational credentials awarded to students enrolled in distance education courses by verifying student identity, protecting student privacy, and notifying students of any special meeting times/locations or additional charges associated with student identity verification in distance education courses.

See [UNT Policy 07-002 Student Identity Verification, Privacy, and Notification and Distance Education Courses](https://policy.unt.edu/policy/07-002) (<https://policy.unt.edu/policy/07-002>).

Transmission and Recording of Student Images in Electronically-Delivered Courses

The zoom recordings will be available to students enrolled in UNT this semester.

Day	Date	topic in class	Homework assignments	Quiz/Exams
Monday	1/11/2021	chapter 1		
Wednesday	1/13/2021	chapter 1		
Monday	1/18/2021	holiday		
Wednesday	1/20/2021	chapter 2	Homework1	1
Monday	1/25/2021	chapter 3		
Wednesday	1/27/2021		Homework2	2
Monday	4/22/28	chapter 4	review chapter 1-3	
Wednesday	2/3/2021		exam-1 chapter 1, 2, 3	
Monday	2/8/2021			
Wednesday	2/10/2021	chapter 4	Homework 3	3
Monday	2/15/2021	chapter 4		
Wednesday	2/17/2021	chapter 5	Homework 4	4
Monday	2/22/2021	chapter 5		
Wednesday	2/24/2021	chapter 5	Homework 5	5
Monday	3/1/2021	chapter 5		
Wednesday	3/3/2021	chapter 6	Homework 6	6
Monday	3/8/2021	chapter 6	review chapter 4 and 5	
Wednesday	3/10/2021		exam-2, chapter 4 and 5	
Monday	3/15/2021			
Wednesday	3/17/2021		Homework 7	7
Monday	3/22/2021	chapter 7		
Wednesday	3/24/2021	chapter 8	Homework 8	8
Monday	3/29/2021	chapter 8		
Wednesday	3/31/2021		exam-3 chapter 6 and 7	
Monday	4/5/2021			
Wednesday	4/7/2021	chapter 9/10	Homework 9	9
Monday	4/12/2021	chapter 9/10		
Wednesday	4/14/2021	chapter 9/10	Homework 10	10
Monday	4/19/2021	chapter 12		
Wednesday	4/21/2021	chapter 8-10	Homework 11	11
Monday	4/26/2021		finals 1030 to 12:30 pm	