

COURSE SYLLABUS

ENGR 2301 STATICS / MEEN 2301 MECHANICS I

COURSE INFORMATION

Credit Hours: 3

Term: Summer 2021

Time: Lecture: Tu Th 12:00PM - 1:50PM (remote)

INSTRUCTOR INFORMATION

Name: Saman Rashidyan, Ph.D.

Office: Discovery Park F115V

Phone: (940) 369-5263

Email: Saman.Rashidyan@unt.edu

* See the instructor's curriculum vitae at the end of this document

COMMUNICATION EXPECTATIONS

- No walk-in office hours this semester.
- During the Zoom meetings you can write your questions in the chat box. The instructor will answer them as soon as possible. You are also allowed to "raise your hand", unmute your microphone and ask your question orally if you needed more clarification.
- You can communicate with your instructor via email any time. Emails will be answered within 48 hours.
- If you need more assistance, a Zoom meeting on Monday, 3:00-5:00 pm can be scheduled for you per request.
- Exams, homework and assignments grades and other course materials will be posted on Canvas.
- The answer sheets for the exams and assignments should be uploaded on Canvas in the assigned time.

COURSE DESCRIPTION

Basic theory of engineering mechanics, using calculus, involving the description of forces, moments and couples acting on stationary engineering structures. Equilibrium in 2 and 3 dimensions, free-body diagrams, friction, centroids, centers of gravity and moments of inertia.

COURSE OBJECTIVES

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

1. Understand the basic principles that govern the equilibrium of bodies under the actions of forces.
2. Apply the knowledge and tools of statics to solve engineering mechanics problems.
3. Manipulate vector operators and apply them to particles and rigid bodies.

4. Draw free-body diagrams of particles and rigid bodies.
5. Calculate the moment of force about a specified point or line.
6. Determine the forces in the members of simple structures (trusses, frames and machines).
7. Determine internal forces developed in structures.
8. Characterize the friction in equilibrium of rigid bodies.
9. Determine the location of center of gravity and centroid for a system of discrete particles and for objects of arbitrary shape.
10. Understand basic calculations of the moment of inertia for an area.

STUDENT LEARNING OUTCOME

An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline. (ABET 1)

MATERIALS

Required Textbook

Engineering Mechanics: Statics, 9th Edition by J.L. Meriam, L.G. Kraige, and J.N. Bolton. Use Wiley Plus to get access to the course materials.

Course outline is based on this textbook.

MINIMUM TECHNOLOGY REQUIREMENTS

- Computer
- Reliable internet access
- Speakers
- Microphone
- Microsoft Office Suite
- [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
- Downloading and installing software
- Using spreadsheet programs
- Using presentation and graphics programs

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 July.

TENTATIVE COURSE OUTLINE

The course outline may be subjected to modifications.

Week	Topic	Book Chapter
1	Introduction to statics	1
2	Force systems	2
3	Force systems	2
4	Equilibrium, Exam #1 (Jun 24)	3
5	Equilibrium	3
6	Structures	4
7	Structures	4
8	Distributed forces - Exam #2 (Jul 22)	5
9	Distributed forces	5
10	Friction - Final Exam (Aug 6) 12:00 p.m.	6

COURSE REQUIREMENTS

Exams

Exams will be based on textbook, 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

Homework is due one week, unless otherwise noted.

Late Homework: Homework cannot be accepted late as it is controlled by the software.

GRADING

Attendance/Participation	5
In-class assignments, and announced/unannounced quizzes	10
Homework	20
Exam #1	20
Exam #2	20
Final Exam	25
Total	100

GRADE DISTRIBUTION

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

ADDITIONAL POLICIES

- Synchronous (live) sessions/Zoom meetings in this course will not be recorded by the instructor. Students are not allowed to record the live sessions too. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.
- Please mute your microphone during the lectures.
- You should turn on your camera for the exams (optional for the lectures).

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. [Insert specific sanction or academic penalty for specific academic integrity violation.]

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/).

Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004)

The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

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 Canvas 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 [insert administration dates] 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>).

Use of Student Work

A student owns the copyright for all work (e.g. software, photographs, reports, presentations, and email postings) he or she creates within a class and the University is not entitled to use any student work without the student's permission unless all of the following criteria are met:

- The work is used only once.
- The work is not used in its entirety.
- Use of the work does not affect any potential profits from the work.
- The student is not identified.
- The work is identified as student work.

If the use of the work does not meet all of the above criteria, then the University office or department using the work must obtain the student's written permission.

Download the UNT System Permission, Waiver and Release Form

Transmission and Recording of Student Images in Electronically-Delivered Courses

1. No permission is needed from a student for his or her image or voice to be transmitted live via videoconference or streaming media, but all students should be informed when courses are to be conducted using either method of delivery.

2. In the event an instructor records student presentations, he or she must obtain permission from the student using a signed release in order to use the recording for future classes in accordance with the Use of Student-Created Work guidelines above.
3. Instructors who video-record their class lectures with the intention of re-using some or all of recordings for future class offerings must notify students on the course syllabus if students' images may appear on video. Instructors are also advised to provide accommodation for students who do not wish to appear in class recordings.

No notification is needed if only audio and slide capture is used or if the video only records the instructor's image. However, the instructor is encouraged to let students know the recordings will be available to them for study purposes.

Academic Support & Student Services

Student Support Services

Mental Health

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>)

Chosen Names

A chosen name is a name that a person goes by that may or may not match their legal name. If you have a chosen name that is different from your legal name and would like that to be used in class, please let the instructor know. Below is a list of resources for updating your chosen name at UNT.

- [UNT Records](#)
- [UNT ID Card](#)
- [UNT Email Address](#)
- [Legal Name](#)

**UNT eUIDs cannot be changed at this time. The collaborating offices are working on a process to make this option accessible to UNT community members.*

Pronouns

Pronouns (she/her, they/them, he/him, etc.) are a public way for people to address you, much like your name, and can be shared with a name when making an introduction, both virtually and in-person. Just as we ask and don't assume someone's name, we should also ask and not assume someone's pronouns. You can [add your pronouns to your Canvas account](#) so that they follow your name when posting to discussion boards, submitting assignments, etc.

Below is a list of additional resources regarding pronouns and their usage:

- [What are pronouns and why are they important?](#)
- [How do I use pronouns?](#)

- [How do I share my pronouns?](#)
- [How do I ask for another person's pronouns?](#)
- [How do I correct myself or others when the wrong pronoun is used?](#)

Additional Student Support Services

- [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/)

INSTRUCTOR'S CURRICULUM VITAE

EDUCATION

University of New Mexico, Albuquerque, NM, USA Ph.D. Civil Engineering	Jul 2017
Urmia University, Urmia, Iran M.S. Structural Engineering	Sep 2005
University of Tabriz, Tabriz, Iran B.S. Civil Engineering	Oct 2000

TEACHING EXPERIENCE

Department of Mechanical Engineering, University of North Texas, Denton, TX Aug 2018 - Present
Senior Lecturer (Full-time)

Teach structures, geotechnics and construction courses in Mechanical Engineering and Construction Engineering Technology programs.

PUBLICATIONS

1. Rashidyan, S., Maji, A. Ng, T. (2021) "Limitations of Sonic Echo testing on buried piles of unknown bridge foundations", Research in Nondestructive Evaluation, 32(2), pp. 59-73.
2. Rashidyan, S., Maji, A. Ng, T. (2021) "Experience of Nondestructive SE/IR testing on steel H-piles buried in layered soils", ASCE Journal of Performance of Constructed Facilities, 35(2): 04021005.

3. Rashidyan, S., Maji, A. Ng, T. (2020) "Accuracy of Parallel Seismic Test Performance on Steel H-piles in Layered Soils", *ASCE Journal of Performance of Constructed Facilities*, 34(6): 06020004.
4. Rashidyan, S., Ng, T., Maji, A. (2020) "Exploratory Study of Nondestructive Parallel Seismic Testing Challenges in Estimating the Depth of Unknown Wood Bridge Foundations", *ASCE Journal of Performance of Constructed Facilities*, 34 (3), 06020002.
5. Rashidyan, S., Maji, A. Ng, T. (2020) "Study the effect of source application on Sonic Echo tests in timber piles", *Civil Engineering Infrastructure Journal*, 53(2) pp. 259–276.
6. Rashidyan, S., Maji, A. Ng, T. (2020) "Performance of Impulse Response Testing on Prismatic Members with Intermediate Joints", *Civil Engineering Infrastructure Journal*, DOI: 10.22059/cej.2020.292705.1629.
7. Rashidyan, S., Ng, T., Maji, A. (2020) "Study of the Effect of Sensor Location on Sonic Echo/Impulse Response Testing in Timber Piles", *AUT Journal of Civil Engineering*, DOI: 10.22060/ajce.2020.16552.5590
8. Rashidyan, S., Maji, A. Ng, T., (2019) "Performance of nondestructive Parallel Seismic testing method in determining the depth of shallow foundations", *ASCE Journal of Performance of Constructed Facilities*. 33, 06019001. [https://doi.org/10.1061/\(ASCE\)CF.1943-5509.0001288](https://doi.org/10.1061/(ASCE)CF.1943-5509.0001288).
9. Rashidyan, S., Ng, T., Maji, A. (2019) "Practical aspects of Nondestructive Induction Field Testing in determining the depth of unknown steel and reinforced concrete foundations", *Journal of Nondestructive Evaluation*, 38: 19. <https://doi.org/10.1007/s10921-019-0557-x>.
10. Rashidyan, S., Maji, A. Ng, T. (2019) "Performance of nondestructive Sonic Echo/Impulse Response testing method on partially dismantled unknown wooden bridge foundations", *Civil Engineering Infrastructures Journal*, 52(2): 205–224, DOI: 10.22059/cej.2019.257833.1484.
11. Rashidyan, S., Maji, A., Ng, T. (2017) "Estimating the depth of concrete pier wall bridge foundations using Nondestructive Sonic Echo" *Journal of Nondestructive Evaluation*, pp. 36 (3) pp. 1-17, DOI 10.1007/s10921-017-0433-5.
12. Rashidyan, S., Sheidaii, M.R. (2017) "Improving double-layer space trusses collapse behavior by strengthening compression layer and weakening tension layer members". *Advances in Structural Engineering*, pp. 1-11, DOI: 10.1177/1369433217693631.
13. Rashidyan, S., Maji, A., Ng, T. (2016) "Bridge foundation depth estimation using Sonic Echo Test", *Experimental and Applied Mechanics*, Vol 4, pp. 99-106, DOI 10.1007/978-3-319-22449-7-12.