ENGR 2301-101H2
Engineering Mechanics-Statics
Fall 2024
11:00 a.m. 1:00 p.m.
Monday, Wednesday
8 Weeks

Instructor Information:
Instructor: Dr. Carl McIntyre
Email: emcintyre1@com.edu
Office: 409-933-8281
Cell Phone: 337-693-2624

Student hours and location:
Monday, Wednesday 10:00 a.m. – 11:00 a.m.
Tuesday, Thursday (In Person) 11:00 a.m. – 12:30 p.m.
Room: STEAM 325-28
Friday (Virtual) 10:00 a.m. – 11:30 a.m.
Required Textbook/Materials:

Course Description: Basic theory of engineering mechanics, using calculus, involving the description of forces, moments, and couples acting on stationary engineering structures; equilibrium in two and three dimensions; free-body diagrams; friction; centroids; centers of gravity; and moments of inertia.

Course requirements:

In Class Quizzes

- In Class Quizzes will be given during scheduled lecture times

Exams

- There will be five exams (non-cumulative) for this class and a final exam.

Homework Assignments

- Homework has deadlines and must be completed on time for full credit.

Determination of Course Grade/Detailed Grading Formula:

Grade Item	% of Final Grade	Description
In Class Problems	15%	Turned in
Homework Problems	15%	Online
Exams	50%	5 Exams
Final Exam	20%	Final
Attendance Discount	-10%	Unexcused Absences/Tardiness

Percentage	Letter Grade
90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

Late Work, Make-Up, and Extra-Credit Policy:
Any deviations from the policies described below are at the sole discretion of the instructor.

NO LATE WORK ACCEPTED
Exams

- A missed exam will result in a zero
- If you notify the instructor ahead of a missed exam you can take it for 50% Credit.

Labs

- There are no make up labs.

Attendance Policy:
COM recognizes no excused absences other than those prescribed by law: religious holy days and military service https://www.com.edu/student-services/student-handbook.html.

- Students are expected to attend all class sessions as listed on the course calendar.
- Attendance will be taken at the beginning of each class.
- Leaving early from class (without approval from the instructor) may result in an absence for that day.
- IF you do have to miss class, it is your responsibility to obtain notes from a classmate.
- Missing lectures may affect your all over class performance.
- Should you anticipate an absence, you must contact your instructor by email PRIOR to the absence.
- Each situation will be evaluated independently.
- You must provide legitimate proof for your absence.

Communicating with your instructor: ALL electronic communication with the instructor must be through your COM email. Due to FERPA restrictions, faculty cannot share any information about performance in the class through other electronic means. (Faculty may add additional statement requiring monitoring and communication expectations via D2L or other LMS)

Students can expect a response within 24 hours of receiving an email during the week. Students can expect a response within 48 hours of receiving an email during the week.

Student Learner Outcomes for this Course

Upon successful completion of this course, students will:

1. State the fundamental principles used in the study of mechanics.
2. Define magnitude and directions of forces and moments and identify associated scalar and vector products.
3. Draw free body diagrams for two- and three-dimensional force systems.
4. Solve problems using the equations of static equilibrium.
5. Compute the moment of force about a specified point or line.
6. Replace a system of forces by an equivalent simplified system.
7. Analyze the forces and couples acting on a variety of objects.
8. Determine unknown forces and couples acting on objects in equilibrium.
9. Analyze simple trusses using the method of joints or the method of sections.
10. Determine the location of the centroid and the center of mass for a system of discrete particles and for objects of arbitrary shape.
11. Analyze structures with a distributed load.
12. Calculate moments of inertia for lines, areas, and volumes.
13. Apply the parallel axis theorem to compute moments of inertia for composite regions.
14. Solve problems involving equilibrium of rigid bodies subjected to a system of forces and moments that include friction.
15. Solve problems involving dry sliding friction, including problems with wedges and belts.

FOR STUDENTS ONLY

Student Learning Outcomes (SLOs) like those listed above for this course are clear, concise statements that outline what students should know, understand, or be able to do at the end of a learning experience. They are designed to be measurable and observable. They also focus on the outcomes, not the processes or activities used to achieve them.

Core Objectives for College of the Mainland Used Within This Course

1. Critical Thinking Skills: Critical thinking skills include creative thinking, innovation, inquiry as well as analysis, evaluation and synthesis of information. For engineers critical thinking is always included as a part of problem solving. (Check out the book Strategies for Creative Problem Solving. An Engineering book by Dr. Fogler a chemical engineering professor)
2. Empirical and Quantitative Skills: Empirical and Quantitative skills include the ability to manipulate and analyze numerical data or observable facts resulting in informed conclusions. As an engineer you learn to go beyond math and collecting data. You develop the skills to analyze lots of data and use the information that the data provides you with to transform how things are made and built in the real world.
3. Communication Skills: Communication skills include effective development, interpretation, and expression of ideas through written, oral and visual communication. As an engineer your ability to communicate will determine how far you are able to get in your career. While some call these “soft skills” those who master the students who master these are the ones that companies are always looking to hire. As a professional engineer you will spend half of your time communicating either in written reports or orally. (See Engineering Communication a textbook for professional workplace communication)

4. Teamwork: Teamwork includes the ability to consider different points of view and to work effectively with others to support a shared purpose or goal. Engineers almost always work in teams so learning to team is essential to success in the workforce. Finally on teaming assignments remember that "failure to team is…failure."
5. Social Responsibility: Social responsibility includes intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national and global communities. Upon graduation you will be given the opportunity to become a member of the "Order of the Engineer". You will make a pledge to practice integrity, serve humanity and give knowledge for the public good. As a professional engineer you must be aware and be able to exercise not just analysis for what works but also what is good for society.
6. Personal Responsibility: Personal responsibility includes the ability to connect choices, actions and consequences to ethical decision making. As an engineer you have to own your mistakes. Every choice you make has consequences and understanding how your choices results in those consequences is a part of being an engineer.

FOR STUDENTS ONLY

The six core objectives are expected of any student who completes the core curriculum here at the College of the Mainland. These objectives given above were developed by the Texas Core Curriculum.

Academic Dishonesty: Any incident of academic policy will be dealt with in accordance with college policy and the Student Handbook. Academic dishonesty – such as cheating on exams is an extremely serious offense and will result in a grade of zero on that exam and the student will be referred to the Office of Student Conduct for the appropriate discipline action.

1. Cheating: Deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not learned, giving or receiving aid unauthorized by the instructor on assignments or examinations. Examples: unauthorized use of notes for a test; using a "cheat sheet" on a quiz or exam; any alteration made on a graded test or exam which is then resubmitted to the teacher.
2. Plagiarism: Careless or deliberate use of the work or the ideas of another; representation of another's work, words, ideas, or data as your own without permission or appropriate acknowledgment. Examples: copying another's paper or answers, failure to identify information or essays from the Internet and submitting or representing it as your own; submitting an assignment which has been partially or wholly done by another and claiming it as yours; not properly acknowledging a source which has been summarized or paraphrased in your work; failure to acknowledge the use of another's words with quotation marks.
3. Multiple Submission: Submission of work from one course to satisfy a requirement in another course without explicit permission. Example: using a paper prepared and graded for credit in one course to fulfill a requirement and receive credit in a different course.
4. Conspiracy: Agreeing with one or more persons to commit an act of academic/scholastic dishonesty.
5. Fabrication of Information/Forgery: Use or submission of contrived, invented, forged, or altered information in any assignment, laboratory exercise, or test; tampering with or production of a counterfeit document, particularly documents which make up the student's academic record. Examples: making up a source or citing nonexistent publication or article; representing made up data as real for an experiment in a science laboratory class; forging a change of grade or student withdrawal record; falsifying any document related to a student academic exercise.

AI Use In Engineering Courses We recognize that with the introduction of AI tools students need guidance on when and how these tools can be used in the classrooms. We may use artificial intelligence (AI) tools and applications (such as Chat GPT, Gemini, Copilot, DALL-E, etc.) in some circumstances in this course as they support the course learning objectives. The specifics of when, where and how these tools are permitted will be included with each assignment, along with guidance for attribution. **Any use of these tools other than where indicated is a violation of this course's expectations and can be detected which will result in a zero for the assignment.**

Student Concerns: If you have any questions or concerns about any aspect of this course, please contact me using the contact information previously provided. If, after discussing your concern with me, you continue to have questions, please contact Prof. Sheena Abernathy Department Chair for Science and Engineering at 409-933-8330 or sabernathy@com.edu

Course outline: (include calendar with lecture topics, due dates)

Class	Wk	Day	Date	Topic
1	1	Monday	10/14/2024	Introduction to Class Steps To Problem Solving in Engineering Review: Solving Systems of Equations Review: Trigonometry
2	1	Wednesday	10/16/2024	Chapter 2: Statics of Particles Force Vectors
3	2	Monday	10/21/2024	Chapter 2: Statics of Particles Force Vectors
4	2	Wednesday	10/23/2024	Chapter 2: Statics of Particles Force Vectors
5	3	Monday	10/28/2024	Exam 1: Chapter 2
6	3	Wednesday	10/30/2024	Chapter 3: Rigid Bodies
7	4	Monday	11/04/2024	Chapter 3: Rigid Bodies
8	4	Wednesday	11/06/2024	Exam 2: Chapter 3
9	5	Monday	11/11/2024	Chapter 4: Equilibrium of Rigid Bodies
10	5	Wednesday	11/13/2024	Chapter 4: Equilibrium of Rigid Bodies
11	6	Monday	11/18/2024	Exam 3: Chapter 4
12	6	Wednesday	11/20/2024	Chapter 8: Friction
13	7	Monday	11/25/2024	Chapter 8: Friction
14	7	Wednesday	11/27/2024	Exam 4: Chapter 8
15	8	Monday	12/02/2024	Chapter 5: Distributed Forces
16	8	Wednesday	12/04/2024	Chapter 6: Trusses

Institutional Policies and Guidelines

Grade Appeal Process: Concerns about the accuracy of grades should first be discussed with the instructor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook https://www.com.edu/student-services/docs/Student_Handbook_2023-2024_v2.pdf. *An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor's professional judgment of the quality of the student's work and performance is also not an admissible basis for a grade appeal.*

Academic Success & Support Services: College of the Mainland is committed to providing students the necessary support and tools for success in their college careers. Support is offered through our Tutoring Services, Library, Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor.

ADA Statement: Any student with a documented disability needing academic accommodations is requested to contact:
Kimberly Lachney, Student Accessibility Services Coordinator
Phone: 409-933-8919
Email: AccessibilityServices@com.edu
Location: COM Doyle Family Administration Building, Student Success Center

Textbook Purchasing Statement: A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Withdrawal Policy: Students may withdraw from this course for any reason prior to the last eligible day for a "W" grade. Before withdrawing students should speak with the instructor and consult an advisor. Students are permitted to withdraw only six times during their college career by state law. The last date to withdraw from the 1st 8-week session is October 2. The last date to withdraw from the 16-week session is November15. The last date to withdraw for the 2nd 8-week session is November 26.

FN Grading: The FN grade is issued in cases of *failure due to a lack of attendance*, as determined by the instructor. The FN grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the FN grade is at the discretion of the instructor. The last date of attendance should be documented for submission of an FN grade.

Early Alert Program: The Student Success Center at College of the Mainland has implemented an Early Alert Program because student success and retention are very important to us. I have been asked to refer students to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If you are referred to the Early Alert Program you

will be contacted by someone in the Student Success Center who will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals.

Resources to Help with Stress:
If you are experiencing stress or anxiety about your daily living needs including food, housing or just feel you could benefit from free resources to help you through a difficult time, please click here https://www.com.edu/community-resource-center/. College of the Mainland has partnered with free community resources to help you stay on track with your schoolwork, by addressing life issues that get in the way of doing your best in school. All services are private and confidential. You may also contact the Dean of Students office at deanofstudents@com.edu or communityresources@com.edu.

Nondiscrimination Statement:
The College District prohibits discrimination, including harassment, against any individual on the basis of race, color, religion, national origin, age, veteran status, disability, sex, sexual orientation, gender (including gender identity and gender expression), or any other basis prohibited by law. Retaliation against anyone involved in the complaint process is a violation of College District policy.