ENGR 2325 - STATICS
Department of Engineering
SUMMER-1-2020

A. COURSE INFORMATION
Course number/section: ENGR 2325.001
Class meeting time: MTWR 10:00 - 11:55 am
Class location: Online
Course Website: https://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION
Instructor: Dr. Gauhar Sabih
Office location: RFEB 321
Office hours: Online (Zoom, WebEx)
Telephone: (361) 825-3294
E-mail: gauhar.sabih@tamucc.edu
Appointments: Through e-mail

C. COURSE DESCRIPTION
This course will cover theory of engineering mechanics involving forces, moments, and couples on stationary structures; equilibrium in two and three dimensions; free body diagrams; truss analysis; friction; centroids; and centers of gravity. After the course, the students will be able to build up analytical capabilities for solving static force related engineering problems.

D. PREREQUISITES AND COREQUISITES
Prerequisites
PHYS 2425 - University Physics I

Corequisites
None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Select one from the following formats of the textbook:
1. Modified Mastering Engineering with Pearson eText - Standalone Access Card
2. Modified Mastering Engineering SVE package with loose-leaf hardcopy
3. Modified Mastering Engineering without Pearson eText - Instant Access. You may select this option if you already have a hardcopy of the textbook.
F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:
1. Students will be able to draw complete free body diagram (FBD) and write appropriate equilibrium equations from the FBD including the support reactions on a structure. Students will display proficiencies by demonstrating following competencies:
   a. Describe position, forces, and moments in terms of vector forms in two and three dimensions.
   b. Determine rectangular and non-rectangular components of a force.
   c. Determine the resultant of a force system including distributed forces.
   d. Simplify system of forces and moments to equivalent systems.

2. Students will be able to apply the concepts of equilibrium to various structures. Students will display proficiencies by demonstrating the following competencies:
   a. Evaluate forces in trusses, frames, and machines.
   b. Determine the internal forces in a structure.
   c. Analyze systems that include frictional forces.

3. Students will be able to calculate moments, center of gravity, centroid, and forces for particular structures. Students will display proficiencies by identifying center of gravity and centroid for discrete particles and a body of arbitrary shape.

G. INSTRUCTIONAL METHODS AND ACTIVITIES

Lectures, homework, exams

H. MAJOR COURSE REQUIREMENTS AND GRADING

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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<tbody>
<tr>
<td>Test-1</td>
<td>15%</td>
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<tr>
<td>Test-2</td>
<td>15%</td>
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<tr>
<td>Test-3</td>
<td>15%</td>
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</tbody>
</table>
### H. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>DAY</th>
<th>TOPIC</th>
<th>CHAPTER</th>
<th>ASSIGNMENTS</th>
<th>EXAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>General Principles</td>
<td>Chapter 1</td>
<td>HW</td>
<td></td>
</tr>
<tr>
<td>Day 2-4</td>
<td>Force Vectors</td>
<td>Chapter 2</td>
<td>HW</td>
<td></td>
</tr>
<tr>
<td>Day 4-6</td>
<td>Equilibrium of a Particle</td>
<td>Chapter 3</td>
<td>HW</td>
<td>Test 1</td>
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<tr>
<td>Day 6-8</td>
<td>Force System Resultant</td>
<td>Chapter 4</td>
<td>HW</td>
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<tr>
<td>Day 9-11</td>
<td>Equilibrium of a Rigid Body</td>
<td>Chapter 5</td>
<td>HW</td>
<td>Test 2</td>
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<tr>
<td>Day 12-14</td>
<td>Structural Analysis</td>
<td>Chapter 6</td>
<td>HW</td>
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<tr>
<td>Day 15-16</td>
<td>Friction</td>
<td>Chapter 8</td>
<td>HW</td>
<td>Test 3</td>
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<tr>
<td>Day 17-19</td>
<td>Center of Gravity and Centroid</td>
<td>Chapter 9</td>
<td>HW</td>
<td></td>
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<tr>
<td>Day 20</td>
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<td>Final Exam</td>
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Note: Changes in this course schedule may be necessary and will be announced by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

### I. COURSE POLICIES

**Exam**
Instructions of exams will be provided before the exam dates.

No make-up exam is allowed unless for legitimate cause (a scheduled vacation, wedding, or airline flight is not a legitimate cause).

**Homework**
Homework may include both online assignments and hardcopy assignments. For online assignments, you should submit the answers through Mastering Engineering and keep all of your scratch papers. For hardcopy assignments, you should use engineering papers, work the problems in an orderly fashion, and box the final results. The due date and time of homework will be announced in the class or online. Late submission is not acceptable. You will receive a zero on the assignment turned in after the due date unless a permission is secured from the Instructor prior
to the due date.

Attendance/Tardiness
You must attend all lectures. You are responsible for any materials covered or handed out or announcements made in your absence. Records of your attendance will be maintained. Tardiness without prior consent of the Instructor is not acceptable and will be penalized. Being tardy consistently can be basis to be removed from classroom or not be permitted to enter classroom. For more than two absences, a deduction from your final grade will apply.

Problem Solving (Homework/Exam/Quiz)
• Write down the given data and the requirement
• Draw neat diagrams as needed
• Solve in steps (1, 2, 3………) as needed
• Box all the answers
• Neat work fetches more points

J. COLLEGE AND UNIVERSITY POLICIES

• Academic Integrity (University)
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

• Classroom/Professional Behavior
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

• Statement of Civility
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.
Deadline for Dropping a Course with a Grade of W (University)

I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with your academic advisor, the Financial Aid Office, and me, before you decide to drop this course. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.

Grade Appeals (College of Science and Engineering)

As stated in University Procedure 13.02.99.C0.03, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is required to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C0.03, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://academicaffairs.tamucc.edu/rules_procedures/assets/13.02.99.c0.03_student_grade_appeals.pdf). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

Disability Services

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116. If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816. http://disabilityservices.tamucc.edu/

Civil Rights Complaints

Texas A&M University-Corpus Christi is committed to fostering a culture of caring and respect that is free from discrimination, relationship violence and sexual misconduct, and ensuring that all affected students have access to services. For information on reporting Civil Rights complaints, options and support resources (including pregnancy
support accommodations) or university policies and procedures, please contact the University Title IX Coordinator, Sam Ramirez (Samuel.ramirez@tamucc.edu) or Deputy Title IX Coordinator, Rosie Ruiz (Rosie.Ruiz@tamucc.edu) x5826, or visit website at Title IX/Sexual Assault/Pregnancy.

**Limits to Confidentiality.** Essays, journals, and other materials submitted for this class are generally considered confidential pursuant to the University's student record policies. However, students should be aware that University employees, including instructors, are not able to maintain confidentiality when it conflicts with their responsibility to report alleged or suspected civil rights discrimination that is observed by or made known to an employee in the course and scope of their employment. As the instructor, I must report allegations of civil rights discrimination, including sexual assault, relationship violence, stalking, or sexual harassment to the Title IX Coordinator if you share it with me.

These reports will trigger contact with you from the Civil Rights/Title IX Compliance office who will inform you of your options and resources regarding the incident that you have shared. If you would like to talk about these incidents in a confidential setting, you are encouraged to make an appointment with counselors in the University Counseling Center.

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

K. **OTHER INFORMATION**
- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

**GENERAL DISCLAIMER**

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner.
during regularly scheduled lecture periods.