SYLLABUS
MENG 2113 – 101: STATICS
(Required Course)
Spring 2022

COURSE INSTRUCTOR
Dr. Jan Brink (jan.brink@msutexas.edu)
Office: McCoy Hall 137
Phone: (940) 397-4589
CLASS SCHEDULE: TR 11-12.20 P.M.
OFFICE HOURS: MWF: 11.00 - 12.00 p.m.;
            TR: 4.00 - 5.00 p.m.
ATTENDANCE POLICY
This course will be delivered in "face-to-face" mode: Attendance is mandatory, and it represents a part of your overall grade. Attendance will be ***checked randomly on select lectures***. **Attendance is very important to understand the material.**

COVID-19 PROCEDURES & REPORTING
Any student (vaccinated or unvaccinated) who has a laboratory confirmed case of COVID-19 must complete the COVID-19 Reporting Form for Students. This form will be used to notify campus health professionals and residence life staff (if you reside on campus) and generate ***absence notifications*** to your instructors.

For the most up-to-date information, please refer to the Updated COVID-19 Procedures at MSU Texas website.

MASK REQUIREMENT
Face coverings are ***recommended*** when around others in ***indoor settings***, but ***not required***. The wearing of masks and frequently washing your hands has proven to be effective at preventing the spread of COVID-19.

D2L (DESIRE 2 LEARN)
D2L platform is used for posting syllabi, course communication, lecture notes, assignments

CATALOG DESCRIPTION
A study of forces and force systems, resultants and components of force systems, forces due to friction, conditions of equilibrium, and forces acting on frame structures.

COURSE PRE-REQUISITES
PHY 1624 – Mechanics, Wave Motion & Heat
MATH 1634 – Calculus I

REQUIRED TEXTBOOK
Engineering Mechanics – Statics, by R.C. Hibbeler, 14th edition, Pearson, 2015. ISBN-13: 9780133918922

LIST OF TOPICS COVERED*
- Introduction to Mechanics
- Force Vectors
- Particle Equilibrium
- Rigid Body Equilibrium
- Structural Analysis
- Center of Gravity
- Centroid
- Moment of Inertia
- Composite Bodies

Additional material might be covered as the time permits.

GRADING SCHEME

The overall grade will be based on the scores earned on the tests, homework assignments, and attendance. The exams account for 80% of the total grade, while homework assignments account for 15%, and the attendance represents the remaining 5%. The contribution of each grade item to the overall score is provided in Table 1.

Table 1: Percentage contribution of each grade item to the overall grade.

Grade Item	Contribution
Test 1	25%
Test 2	25%
Final Exam	30%
Homework	15%
Attendance	5%
TOTAL	**100%**

FINAL EXAM

Tuesday, May 3, 1.00 – 3.00 pm

CONFLICT RESOLUTION PROCESS

1. In the event of an issue with the course or the instructor, the student should first contact the instructor. The faculty and the student will discuss the issue. Hopefully, a resolution is reached.

2. The student should notify the faculty via email again if the issue still did not get resolved after the first communication.

3. If not resolved, the student could then contact the Chair of the McCoy School of Engineering, Dr. Desai, face to face or via email, (raj.desai@msutexas.edu), and discuss the issue.

4. Dr. Desai will discuss the issue at hand with the faculty member. Dr. Desai will discuss the result of this discussion with the student. Hopefully, a resolution is reached on the issue after this step.

5. The student should notify the Chair via email if the issue still did not get resolved.

6. The Chair will contact the Dean and try to resolve the conflict. In case the conflict deals with the student grade, she will forward the case to the Grade Appeals Committee, if necessary.

COURSE ORGANIZATION AND ASSESMENT

- **Course Format:** This course consists of three 50-minute sessions each week. Class meetings will contain lecture sessions that cover the relevant topics for that particular class. Not all material can be covered during the class session, hence, expect to spend extra time outside of class to finish reviewing the material.

- **Student Attitude:** Once class starts, the use of cell phones, conducting private discussions, using the computer (unless requested by the instructor), working on anything that is not directly related to the course, and making derogatory remarks about your classmates or instructor will not be accepted and may result in your dismissal from the class.

- **Midterm Progress Reports:** In order to help students keep track of their progress toward course objectives, the instructor for this class will provide a Midterm Progress Report for at-risk students through their WebWorld account. Midterm grades will not be reported on the students' transcript; nor will they be calculated in the cumulative GPA. They simply give students an idea of where they stand at the midpoint

of the semester. Students earning below a C at the midway point should schedule a meeting with the professor and seek out tutoring.

- **Homework Evaluation Method:** Your performance will be tested regularly throughout the semester by homework assignments. While several homework problems may be assigned as part of a homework assignment, it may be the case that only a subset of problems will be graded. However, you must attempt all problems. ***Do not try to guess which problems will not be graded.***

- **Late Assignments:** Homework assignments must be turned in on the due date, at the due time. Late assignments will ***NOT*** be accepted

- **Exam Make-up:** Make-up exams will be given only in case of an ***emergency*** (accompanied by a doctor's report) or a major conflict due to a scheduled ***athletic event*** or a ***conference.***

- **General Study Guidelines:** Plan on spending few hours outside of class ***each week*** to review the material, go through the in-class exercises again, and to work on homework assignments. Do not wait until the last day to start the homework or to prepare for exams. Utilize office hours throughout the semester whenever you need help about the assignments or the course material.

- **Academic Integrity Policy:** Scholastic dishonesty will not be tolerated and will be prosecuted to the fullest extent. You are expected to have read and understood the current issue of the student handbook regarding student responsibilities & rights, and the intellectual property policy information about procedures and what constitutes acceptable on-campus behavior.

- **Disability Support Services:** If you have a documented disability that will impact your work in this class, please contact the Disability Support Services and the instructor to accommodate your needs.

- **Disclaimer Statement:** Information contained in this syllabus, other than grading policies, may be subject to change with advance notice, as deemed appropriate by the instructor.

- **Campus Carry Rules/Policies:** Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information, please refer to campus carry rules and policies.

COURSE OBEJCTIVES IN RELATIONSHIP TO ABET STUDENT OUTCOMES

Table 2: Course objectives matched with the ABET student outcomes (1-7)

COURSE OBJECTIVES	1	2	3	4	5	6	7
Students will be able to utilize vector operations to manipulate and determine properties of force vectors.	X						
Students will be able to determine conditions of equilibrium using free body diagrams.	X	X					
Students will be able to determine moments of forces through scalar and vector means.	X						
	X						

COURSE OBJECTIVES	1	2	3	4	5	6	7
Students will be able to utilize vector operations to specify couple moments.							
Students will be able to study conditions for equilibrium of rigid bodies.	X	X					
Students will be able to invoke structural analysis including method of sections.	X	X					
Students will determine the center of gravity, mass, and the centroid of a body.	X						
Students will be able to determine moments of inertias for areas.	X						

Table 3: Detailed descriptions of the ABET student outcomes (1-7) listed in Table 2.

ABET OUTCOME	DESCRIPTION
1	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2	an ability to apply engineering design to produce solutions that meets specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3	an ability to communicate effectively with a range of audiences.
4	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Prepared by Dr. Jan Brink, Jan 2022.