



SYLLABUS
MENG 2113-201: STATICS
(Required Course)
Spring 2021

Instructor: Dr. Pranaya Pokharel

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Office Hours: MWF 9:00 AM -11:50 AM; TR 11:00 AM-11:50 AM (Remotely); Other days and times by appointment.

Course Schedule: Tuesday, Thursday: 8:00 am – 9:20 am

Class Location: McCoy Hall 207

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, MATH 1634

REQUIRED TEXTBOOK

Engineering Mechanics – Statics, by R.C. Hibbeler, 14th edition, Pearson

TOPICS COVERED

- Force vectors
- Particle equilibrium
- Force system resultants
- Equilibrium of a rigid body
- Structural analysis
- Center of gravity and centroid
- Moments of inertia and moments of area.

Additional material may be covered as time permits.

GRADING

The overall grade for the course will be based on the scores earned on the homework assignments, quizzes, exams, and the attendance. The homework assignments and quizzes

account for 10% of the course grade, exams account for 80% of the course grade, and attendance accounts for 10%. The overall score for the course is determined as follows.

Table 1: Percentage contribution of each assignment.

Assignments	Contribution
Test 1	25%
Test 2	25%
Final Exam	30%
Attendance	10%
Homework and quizzes	10%
TOTAL	100%

FINAL EXAM

Thursday, April 29, 8:00 am – 10:00 am

COURSE ORGANIZATION AND ASSESMENT

- **Course Format:**
This course consists of two 80-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.
- **Class Attendance:**
You are expected to attend class regularly and are responsible for notes, homework assignments, quizzes and exams missed while absent. Attendance (or lack thereof) directly affects the course grade. **Attendance is considered very important in this course, and counts for 10% of the grade.**
- **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 beginning of class. Once class starts, late assignments will **NOT** be accepted.

- **Pop-Quizzes:**

There **MIGHT** be a few pop-quizzes throughout the semester that are related to the specific homework problems assigned to distinguish those who work by themselves from those who copied others' works, or the solution manual.

- **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 study the material 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.

GENERAL EDUCATION STATEMENT

Students in this course must demonstrate their proficiency in oral and written communication through written homework assignments and exams.

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. More details can be found at <https://msutexas.edu/student-life/assets/files/handbook.pdf>

CONFLICT RESOLUTION

- The student should contact the instructor face to face or via e-mail if there is an issue with the course or the instructor. The faculty and the student will discuss this face to face or via email. Hopefully a resolution is reached on the issue.
- The student should notify the faculty via email again if the issue still did not get resolved after the first encounter or communication.
- The student can then contact the Chair of the McCoy School of Engineering, Dr. Desai, face to face or via email, (raj.desai@msutexas.edu), and discuss this issue. 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.
- The student should notify the Chair via email if the issue still did not get resolved.

- 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.

DISABILITY SUPPORT SERVICES

If you have a documented disability that will impact your work in this class, please contact me to discuss 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.

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 LEARNING OBJECTIVES AND RELATIONSHIP TO STUDENT OUTCOMES

Table 2: Course learning objectives related to the ABET criteria (1-7)

Outcome-Related Course Learning Objectives	1	2	3	4	5	6	7
Students will utilize vector operations to manipulate and determine properties of force vectors.	X						
Students will determine conditions of equilibrium using free body diagrams.	X						
Students will determine moments of force through scalar and vector means.	X						
Students will utilize vector operations to specify couple moments and moments about a specific axis.	X						
Students will study conditions for equilibrium of rigid bodies including constraints and two and three force members.	X						
Students will invoke structural analysis including method of joints and method of sections.	X	X				X	
Students will determine the center of gravity, mass, and the centroid of a body.	X						
Students will determine moments of inertias for areas.	X						

Table 3: Detailed interpretations of the ABET criteria (1-7) listed in Table 2.

ABET Criteria	Interpretation
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.

“During class, students must comply with MSU’s requirement for wearing a face covering” as mandated in the document <https://msutexas.edu/return-to-campus/assets/files/msu-texas-facial-covering-requirement.pdf>

Prepared by Pranaya Pokharel, January 2021.