

**CE 2315  
STATICS  
M-W-F 9:30 am – 10:20 am  
Undergraduate Learning Center 210  
Fall 2019**

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Office Hours: Students are always welcome

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Textbook: Engineering Mechanics: STATICS 14<sup>th</sup> Edition by R.C. Hibbeler  
MasteringEngineering (www.MasteringEngineering.com)  
Course ID: MECHANG9069210  
iClicker / <https://www.iclicker.com/students>

Prerequisites: MATH 1411 Calculus

**COURSE OBJECTIVES**

This course is designed to give students a working knowledge of the effects of forces, equilibrium between bodies, distributed forces, free body diagrams, trusses, and moments of inertia. At the end of the course, students will know how to apply the principles that govern the behavior of rigid-body mechanical engineering systems in static equilibrium. Specifically, students will be able to do the following:

1. Identify an engineering problem appropriate for engineering mechanics analysis.
2. Draw a free-body diagram and identify all forces and moments acting on an object at rest.
3. Represent force and moment systems with equivalent systems.
4. Perform an analysis to identify all forces and moments acting internally or externally on an object.
5. Determine geometric properties of one, two and three dimensional objects.

**COURSE TOPICS**

- |                                   |              |
|-----------------------------------|--------------|
| 1. General Principles             | (Chapter 1)  |
| 2. Force Vectors                  | (Chapter 2)  |
| 3. Equilibrium of a Particle      | (Chapter 3)  |
| 4. Force System Resultants        | (Chapter 4)  |
| 5. Equilibrium of a Rigid Body    | (Chapter 5)  |
| 6. Structural Analysis            | (Chapter 6)  |
| 7. Internal Forces                | (Chapter 7)  |
| 8. Friction                       | (Chapter 8)  |
| 9. Center of Gravity and Centroid | (Chapter 9)  |
| 10. Moment of Inertia             | (Chapter 10) |

Note: Handouts will be provided during the development of the course. Students should review their e-mails periodically for communications related to the course. A virtual folder will be also implemented to facilitate distribution of the course material.

### GRADING

Your grade for this course will be determined on the basis of 100 points as follows:

Regular Exams 1, 2, 3	45 points
Final Exam	30 points
Quizzes and Class Learning Activities	15 points
Homework (MasteringEngineering) + Portfolio	10 points

Final grades are based on the normal distribution of points as shown below:

A	100 - 90
B	89 - 80
C	79 - 70
D	69 - 60
F	< 60

The instructor reserves the right to revise this grading plan. However, students will be informed of any changes during the semester.

In accordance with University regulations, students who miss examinations will receive grades of zero. Exceptions to this rule will be made only on a carefully considered individual basis under extraordinary circumstances and only if the student contacts the instructor one week before the exam. If you know in advance that you are going to miss an exam, it is your responsibility to inform the instructor before the exam.

Any discrepancies with your grades in homework, quizzes, or exams need to be resolved no later than seven calendar days after you have received your grade. Grades discrepancies for homework and quizzes should be resolved with your TA. If you still have a discrepancy on your grade, you can make an appointment with your instructor within the seven days. Discrepancies regarding grades on exams should be resolved with your instructor within seven calendar days after you have received your grade. After the seven calendar day period, issues regarding grades on quizzes, homework, or exams will only be entertained.

### ATTENDANCE

Students are expected to attend all class periods. Those who fail to attend class regularly will miss lectures, class learning activities, and quizzes. Students with four or more unexcused absences will be inviting scholastic difficulty may be dropped from the course with a grade of F with the approval of the Dean of the College of Engineering.

### DISABILITIES

Students with disabilities will be accommodated. Students are required to notify the instructor of any disability at least one week before the start of class.

## TEACHING METHODOLOGY

The teaching methodology is learner-centered and follows a problem-solve approach using active learning techniques. Read in your textbook the topic to be discussed prior to the class and review the subject thoroughly after the class. Most of the class period will be devoted for the instructor to solve problems together with the students, learning class activities individually or in teams, and students presenting solutions to homework problems.

Work on all the examples given in the text, solve your homework problems and as many additional problems as you can. Students will also work problems through the MasteringEngineering online resource (Course ID: MECHANG9069210), and keep a portfolio with the solution process. Additional on-line tools or cell phone apps for learning purposes could be used in class including a cloud-based student response software by iClicker. Sign in to Blackboard (available from <https://my.utep.edu/>) and click the link for this course. Search for the iClicker REEF icon on the Home Page. Click this link to launch a special instance of REEF, then log in, or create a new REEF account. When creating your account, use your university email address (username@miners.utep.edu).

## STUDY AIDS

One of your major study aids is MasteringEngineering. This learning tool was developed at MIT and provides students a personalized learning environment. Some of the features include:

- Automatic grading for immediate feedback to students.
- Wrong-answer specific feedback.
- Hints to help students in problem solving.
- Adaptive follow-up assignments
- Ability to track student performance to ABET learning outcomes.
- Powerful diagnostic gradebook

You are also always welcome to visit your instructor following an open-door policy or making an appointment. There is also a teaching assistant (TA) assigned to the course. The TA will assist the instructor in grading quizzes, proctoring exams, and answering questions. There will be TA's office hours scheduled to answer individual questions. Your teaching assistants is:

- Johanes Makahaube: [jmakahaube@miners.utep.edu](mailto:jmakahaube@miners.utep.edu)

## EXAMS

Three regular exams and a Final Exam will be given in the course. Exams are comprehensive and can cover all topics up to that date. The exam dates will be announced at least one week in advance.

## HOMEWORK

Homework will be assigned regularly. Past experience clearly shows that a student's grade is strongly dependent upon the effort is put by a student into homework assignments. The purpose of the homework is to develop your solving skills and prepare you for quizzes and exams. Problems assigned for homework are the minimum amount of problems that you should solve to learn the subject.

Homework assignments will be given and solved in the MasteringEngineering® resource center. Read the "Get Started with Pearson's MasteringEngineering" information to begin and use all the available learning tools. This video will walk you through the MasteringEngineering registration process and will also provide some helpful tips. <https://youtu.be/kUUrUtb5Gqc>.

You should form study teams ( 3 students) to discuss and solve problems assigned as homework. The study team MUST maintain a homework portfolio with solutions to assignments. The instructor or TA can review the homework portfolio at any time. The instructor will call individual students or teams to present homework problem solutions in the class.

### QUIZZES

You should expect a quiz once a topic is completed. The quiz will cover theoretical aspects (definitions and derivations) and/or problem solving skills. Length of the quizzes may vary depending on the topic. Quiz scores will depend on showing calculations and clearly indicating the correct answer. The quizzes will be closed book and closed notes unless told otherwise. No make-up quizzes will be given. The two lowest scores will be eliminated. If you miss a quiz, that quiz counts toward the two lowest scores to be eliminated. Quizzes are focused on latest lectures but you should expect some questions related to previous topics to reinforce your learning process. The quiz is a learning tool to monitor your learning progress from homework, and prepare you for the exams. Quizzes can be on paper or on-line. There may be other learning activities conducted in class that may count as a quiz.

### CALCULATOR POLICY

Only models of calculators approved by NCEES are permitted during exams and quizzes. The following are the only calculators that will be permitted during quizzes and exams:

**Casio:** All fx-115 models. Any Casio calculator must contain fx-115 in its model name.

**Hewlett Packard:** The HP 33s and HP 35s models, but no others.

**Texas Instruments:** All TI-30X and TI-36X models. Any Texas Instruments calculator must contain either TI-30X or TI-36X in its model name.

More information about the NCEES calculator policy: <https://ncees.org/exams/calculator-policy/>

### POLICY ON CHEATING

Students are expected to be above reproach in all scholastic activities. Students who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the university. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student, or the attempt to commit such acts (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22). Scholastic dishonesty harms the individual, all students, and the integrity of the university. Policies on scholastic dishonesty will be strictly enforced.

### HONOR CODE

The Civil Engineering Department embraces the Honor Code: "Civil Engineering and Construction Management are licensed professions that are regulated by each state through a licensing or engineering practice law. Each state requires engineers to protect the public safety and act in an honest and trustworthy manner. These standards of ethical behavior are also codified in ethics guidelines established by the National Society of Professional Engineers (NSPE), the American Society of Civil Engineers (ASCE), and the Texas Society of Professional Engineers (TSPE)." Please learn more about the honor code Department Policy and disciplinary actions here:

<http://catalog.utep.edu/undergrad/college-of-engineering/civil-engineering/>

**COURSE/INSTRUCTOR EVALUATION**

A course/instructor evaluation will be conducted in class near the end of the semester.

**FINAL COMMENT**

The instructor expects all the students to succeed in learning the course subjects. It is critical for your success to establish a good studying habit in order to do very well in this course. Practice as many problems as you can.

If you feel that you are not understanding a subject, please do not hesitate to ask questions in class, or see your instructor or teaching assistant outside of class. Any specific comments that students have on how the course might be improved are particularly welcomed.