

MECH 1321: STATICS

Class Reference Number:	15909
Textbook:	Engineering Mechanics: Statics 14th Edition by R.C. Hibbeler
Required Material:	Mastering Engineering Access Code
Class/Lab Meeting:	TR, 7:30 am to 8:50 am
Class Room:	Quinn Hall 212
Prerequisite:	MATH 1411 Calculus
Recommended Pre-Course:	PHYS 2420 Physics I
Instructor:	Dr. Joshua T Green, Ph.D., jtgreen2@utep.edu Office Hours: T (1:30-4:00 pm) & R (3:00-4:00 pm), or by appointment Office: C107E (1st Floor of Classroom Building)
Teaching Assistant:	Paul J Lievano, pjlievano@miners.utep.edu
Office Hours:	TBD
Location:	TBD

Course Objectives

At the end of the course, students will learn the principles that govern the behavior of rigid-body mechanical engineering systems in static equilibrium. Specifically, students will be able to:

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.

Topics Covered

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)

Grades

Your final grade for this course will be based on the following activities

<u>Assignments</u>	<u>Percentage</u>
Quizzes	10%
Homework	20%
Midterm Exams (3)	60%
Project	10%
Total	100%

<u>Grade Scale</u>	
100-90%	A
89-80%	B
79-70%	C
69-60%	D
<60%	F

The instructor reserves the right to revise this grading plan.

Calculators

The following will be the only calculators allowed during exams:

- Casio: All fx-115 or fx-991 models. Any Casio calculator must contain fx-115 or fx-991 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.

These are the same calculators that are currently being allowed in the Fundamental of Engineering (FE) and Professional Engineering (PE) exams (<http://ncees.org/exams/calculator-policy/>).

Homework – Pearson MasteringEngineering™

Homework assignments are posted to MasteringEngineering (MasteringEngineering.com). Access to Mastering can be purchased at the Bookstore as a textbook bundle **or** individual access code. The international version of the textbook bundle **DOES NOT** work. Used books **DO NOT** come with Mastering. Mastering can be purchased **online** directly from MasteringEngineering.com. Make sure to select the correct version of the book during registration. Pearson offers refunds for up to 14 days. Keep a paper record of HW solutions.

COURSE ID: MEGREEN2997016

Getting Started Video

Registration Video

Student Support Website

Quizzes – Pearson MasteringEngineering™

Quizzes are due at **10:00pm the night before class**. The quiz can only be completed successfully by reading the book and understanding the theory.

Attendance

Exams and quizzes are given at the beginning of the classes. No additional time will be allowed for late attendees. If a student misses ANY assignment due to university related duty, serious illness, or family emergency a makeup assignment may be arranged. Written proof must be provided along with contact information for verification. The instructor **MUST** be notified of an absence **PRIOR** to the absence. A message may be left with the Instructor 24/7 by email.

Flipped Classroom

This course follows the "*Flipped Classroom*" concept. Students are expected to learn Statics theory through reading the book before class. During class, we will spend our time solving problems from the book and completing homework assignments. The required reading for each day of class are listed in the class schedule.

Success in this classroom environment will require that students prepare extensively before attending each lecture. Failure to maintain attendance or prepare before class will severely hurt student performance. Before class, students should practice the examples given in the book and solve as many unassigned problems as possible.

Exams

Exam dates are listed in the course schedule; however, dates are subject to change. Any corrections will be announced. You will be allowed a **one-page, single sided formula sheet**. No solution to a problem may be listed upon it. It must be stapled to your exam when you turn it in. Electronic devices (e.g. laptops, tablets, cell phones, etc.) are not permitted. Hoodies must be down, hats must be turned backwards. If there is evidence that you have cheated on an exam, the exam will be declared invalid, and you will fail the course. **To receive full credit**, the exam problem solution must conform to the following structure:

1. Knowns/Unknowns: List the given parameters. List the parameters you must find.
2. Free Body Diagram: Draw a neat FBD that includes arrows with arrowheads, dimensions, and all the parameters needed to solve the problem (When appropriate).
3. Assumptions: List any assumptions made and the equations you will need.
4. Steps: Give necessary details so that people can easily follow your calculations. Answers without the steps will not be accepted.
5. Equations: Label each equation with a number (1), (2), (3), etc.
6. Answer: Include units and box your final answers.
7. Neatness: Disorganized, incomplete, and/or copied work will be penalized.

Course Drop

It is the student's responsibility to officially drop a course that s/he no longer wishes to take before the course drop deadline. Failure to do so WILL result in a grade of "F" on the student's academic record. If you fall behind, do not give up and quit attending without dropping the course first. Athletes must receive permission from the Miner Athletic Advising Center before dropping a course. International students with F or J visas must receive permission from the Office of International Programs before dropping a course.

Study Aids

Instructor's Office Hours

No appointment is needed during office hours. Visits outside office hours are welcome (if the door is open); however, discussion time may be limited due to other commitments. Please make an appointment (via email) for a full meeting.

Teaching Assistant

The TA will assist the instructor in grading homework, proctoring exams, and answering questions. There will be TA tutoring sessions weekly.

ACES and the Tutoring Center

Please note there are tutoring services available in the ACES center. Tutoring is free to you; the department pays for the service. If tutors are not used, the Department may stop funding them. Check the schedule of the tutors and make use of the services. For more details visit the

ME Advising Blackboard -> cc mech acadav: MECH Academic Advising -> Tutoring & Resources

At the link you can find tutor schedules, location of the ACES center, and the list of tutors available. For more information send email to METutors@utep.edu

<u>Class Schedule</u>				
Week	Date	Reading Assignments	Quiz	Homework
1	27-Aug	Introduction		
1	29-Aug	Chapter 1, 2.1-2.3		1
2	3-Sep	2.4-2.6	1	2
2	5-Sep	2.7-2.9	2	3
3	10-Sep	3.1-3.4	3	4
3	12-Sep	4.1-4.2	4	5
4	17-Sep	Exam Review		
4	19-Sep	Exam 1 (CHP 1,2,3)		
5	24-Sep	4.3-4.5	5	6
5	26-Sep	4.6-4.7	6	7
6	1-Oct	4.8-4.9	7	8
6	3-Oct	5.1-5.2	8	9
7	8-Oct	5.3-5.4	9	10
7	10-Oct	5.5-5.6,5.7	10	11
8	15-Oct	Exam Review		
8	17-Oct	Exam 2 (CHP 4,5)		
9	22-Oct	6.1-6.2	11	12
9	24-Oct	6.3-6.4	12	13
10	29-Oct	6.6	13	14
10	31-Oct	7.1-7.2	14	15
-	1-Nov	Drop Withdrawal Deadline	-	-
11	5-Nov	7.3	15	16
11	7-Nov	8.1-8.2	16	17
12	12-Nov	9.1-9.2	17	18
12	14-Nov	10.1-10.4	18	19
13	19-Nov	Exam Review		
13	21-Nov	Exam 3 (CHP 6/7/8)		
14	26-Nov	Project		
-	28-Nov	No Class - Thanksgiving	-	-
15	3-Dec	Project		
15	5-Dec	Project		

Homework is due **the night after (W and F) the listed class date** at 9:00pm

Quizzes are due **the night before (M and W) the listed class date** at 10:00pm

Academic Honesty

During exams and quizzes, you are not allowed to use any form of wifi enabled electronic device, including cell phones or other electronic communication devices or methods (wrist watches, earbuds, etc.). No wrist watch or other electronic device may be worn. Calculators and watches may be subject to inspection. You may be asked to temporarily remove glasses to allow for their inspection.

You may not bring backpacks, hats, bulky coats or hoodies into the exam room. Lockers are not available at the exam site so plan and leave your belongings in a secure location. You may NOT sit them in a corner of the exam room.

You must show your work for all problems. You must use the paper provided by the instructor. If no work is shown you may not receive credit. After the exam, the instructor may require you to explain how you solved a problem on the exam. If you refuse to or cannot explain your work, you may be subject to disciplinary action.

No electronic version of the book, loose paper print-outs of the book, or extra sheets of paper of any kind are allowed unless explicitly mentioned in writing by the instructor. As a part of the zero-tolerance policy, if you have a cellphone or other electronic device capable of communication on your person; or if any proctor sees or hears any electronic device during the exam or if you share your work with someone else, you will be reported to the proper authorities and you may receive a zero on the exam or an F in the class. Other actions including suspension may also be pursued.

No one will be allowed to leave the room during an exam. This includes restroom breaks.

University approved recording devices may be located at various locations in the room and may be out of sight of the students. These recordings will be managed according to the UTEP approved regulations for such media. The instructor may create a record of your activity during the exam and may take photographs of your work during the exam.

If you are suspected of scholastic dishonesty you may or may not be directly confronted about your conduct by the instructor or proctor. You will, however, be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) and your exam may not be admissible. Your grade in the class may not be available until OSCCR makes a final ruling, which may adversely impact your ability to enroll in other classes.

If you arrive more than 15 minutes late to an exam, you will not be allowed to take the examination.

There will be no makeup exams administered. If you have a university approved excuse, your instructor will have a process for determining how to handle the missing grade outlined in the syllabus. However, no makeup exams will be given.

If you miss more than one exam, the instructor may choose to administratively drop you from the class. This may adversely impact a visa and financial aid.

No food or drink may be brought into the examination room.

Departmental policy allows for the use of assigned seats. All students must present their UTEP issued ID prior to and during every exam and may be required to sign in. Not having a UTEP issued ID when asked will result in forfeiture of the exam. No other IDs will be accepted.

Scholastic dishonesty on homework, lab assignments, and all other class assignments will be held to the same standards and requirements of academic honesty as quizzes and exams.

Class Attendance Policy

Attendance is mandatory. Anyone with 5 or more absences will be dropped from the class. A drop for not attending will count toward the State Allowed Six Drop Limit. If you are failing the class at the time of the drop you may also be given a WF designation. Be advised that a drop could adversely impact visa status, financial aid, and other programs.

As per UTEP rules, you may be asked to show a UTEP ID at any time during class. Anyone who is present and not registered in the class will be subject to disciplinary action unless the instructor gives prior approval.

Excused Absence for Exams

The UTEP catalog allows Exam Absence to be excused ONLY for University-Recognized Activities and very specific other situations. Medical absence is NOT allowed in the UTEP catalog. For consistency with the catalog, students will NOT be excused from exams due to illness.

Harassment Policy

The University (see Handbook of Operating Procedures 1.2.2.4) has a zero-tolerance policy for harassment. Engagement in any behavior considered harassment will be reported to the proper authorities. In addition to generally understood forms of harassment, the department also treats the following behavior as harassment:

- Repeated emails and/or calls regarding subjects that have already been addressed. Once a decision has been made or a question answered, a student who continues to ask the same question will be given a warning by the recipient of the email/call. If the student continues, the behavior will be reported. Questions that seek understanding of course material are not harassment; but repeated questions about a grade or an administrative decision are.
- Grades are NOT negotiable, ever. If you believe a grading mistake has been made, you must follow the process described in the UTEP catalog. Any request for a grade elevation that is NOT based on a mistake is considered harassment and will be reported immediately.
- Remaining in an office after the occupant requests you leave is considered harassment and potentially threatening. You will be reported immediately without warning and, depending on the severity, may be reported to law enforcement.
- Similar behavior towards department staff and student advisors will also be treated as harassment, including persistent phone calls, emails, and badgering. Department staff and student advisors are there to help students and should be treated with due respect.

The above schedule, policies, and assignments in this course are subject to change in the event of extenuating circumstances.