MECH 2322 Mechanics of Materials  
Course Syllabus  
Fall 2016

Time and Location: TR 15:00 – 16:20, PSCI 208  
Instructor: Dr. Omar Cedillos  
E-mail: ocedillos@gmail.com  
Office hours: MW 09:00 am – 10:00 am  
Office location: Engineering Bldg., A-114  
Office phone: 747-5863  

Required Material: Mastering Engineering Access Code  
Prerequisites: MECH 121 or CE 23 Statics with a C or better

Course Objectives  
At the end of this class the typical students should be well prepared in the following areas:  

1. Identify and solve basic axial, shear, torsion and beam bending stress analysis and deflection problems.  
2. Solve simple combined loading stress analysis and deflection problems.  
3. Have a good understanding of stress and strain components, stress transformation in 2D and 3D.  
4. Solve statically indeterminate problems  
5. Column buckling  
6. Ability to resolve internal tractions (stresses) with properly chosen F.B.D.s

Course Content  
1. Chapter 1: Stress  
   Hibbeler 1.2, 1.3, 1.4, 1.5, 1.6  
2. Chapter 2: Strain  
   Hibbeler 2.1, 2.2  
3. Chapter 3: Materials  
   Hibbeler 3.1, 3.2, 3.4, 3.6, 3.7  
4. Chapter 4: Axial  
   Hibbeler 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7  
5. Chapter 5: Torsion  
   Hibbeler 5.1, 5.2, 5.3, 5.4, 5.5  
6. Chapter 6: Bending  
   Hibbeler 6.1, 6.2, 6.3, 6.4, 6.5  
7. Chapter 7: Transverse shear in bending  
   Hibbeler 7.1, 7.2, 7.3  
8. Chapter 8: Combined loading  
   Hibbeler 8.1, 8.2
**Exams:** There are three exams. Makeup exams are not given.

**Projects:** One final project will be assigned at the end of the semester.

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

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams (3x)</td>
<td>50%</td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>20%</td>
</tr>
<tr>
<td>Project</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
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**Grade Scale**

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

The instructor reserves the right to revise this grading plan

**Homework and quizzes – Pearson Mastering Engineering**
Homework assignments and quizzes are posted to the 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.

**COURSE ID:** MECEDILLOS15163

**Exams**

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** on the exam 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.

Reasonable Accommodation Policy: If you have a disability and need classroom accommodations, please contact the Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.

COURSE CALENDAR May be updated throughout the semester. Always see the current version of the syllabus on Blackboard.

Department of Mechanical Engineering Safety Statement
The Department of Mechanical Engineering at the University of Texas at El Paso is committed to a model of excellence in education that includes providing a safe and healthy environment for its students, staff, faculty and the general public.

Our goal is to maximize education and research training that can only occur if you, the individual, minimize hazards and risks. This can be done by:

- Providing adequate control of the health and safety risks arising from any and all activities;
- Consulting with employees on matters affecting their health and safety
- Providing and maintaining safe laboratories and equipment;
- Ensuring safe handling and use of substance;
- Ensuring all employees are competent to do their task and have adequate training; and
- Maintaining clean, safe and healthy working conditions

The principal investigator or individual in charge of each laboratory is ultimately responsible for safety in that respective lab. This includes training and ultimate release of the laboratory. Within the Department, we hold every employee (staff, faculty, student) responsible for implementing our safety practices and our departmental safety policy. We hold every employee (staff, faculty, student) responsible for providing leadership within our department to establish effective environmental safety and occupational health standards.