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## MECH 3334: Mechanical Design

Textbook:	<b><u>Mechanical Engineering Design: Shigley's 10<sup>th</sup> ed.</u></b> by Richard G. Budynas and J. Keith Nisbett
CRN:	33857
Class/Lab Meeting:	1:15 - 2:20 pm, MTWRF
Class Room:	Classroom Building C205
Prerequisite:	Mechanicals of Materials
Instructor:	Methaq Abed, Ph.D., P.E. Department of Mechanical Engineering Office: A104 E-mail : msabed@utep.edu Office Hours: (12:30 -1:00 pm) MTWR, other time by appointment.

### Topics covered

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|---|-------------|
| 1. Introduction                             | (Chapter 1) |
| 2. Materials                                | (Chapter 2) |
| 3. Load and stress analysis                 | (Chapter 3) |
| 4. Deflection and stiffness                 | (Chapter 4) |
| 5. Failures resulting from static loading   | (Chapter 5) |
| 6. Failures resulting from variable loading | (Chapter 6) |
| 7. Shafts and shaft components              | (Chapter 7) |

### Grades

Your grade for this course will be assessed based on your performance in:

**Mid-term exams (60 %)**

**Quizzes (7.5 %)**

**Attendance and Participation (12.5%)**

**Homework (10%)**

**Project (10 %)**

There will be 3 in-class exams. All exams must be taken at the scheduled time and date set by the instructor. *No makeup exam will be given under any circumstances* if a student miss one of the tests for University-Recognized Activity, the exams' grade will be calculated based on the average of two tests.

Please join the course in tophat.com under the **course code (499346)**.

<https://app.tophat.com/register/>

**Tophat will be used to take attendance and assign some class activities.**



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**Class Schedule (Tentative)**

Exam #1: Friday, June 21<sup>nd</sup>  
Exam #2: Tuesday, July 9<sup>th</sup>  
Exam #3: Tuesday, July 30<sup>th</sup>

Drop/Withdrawal Deadline: July 12<sup>th</sup> .

**Project Due Date:** Thursday , July 18<sup>th</sup>.  
and groups presentation will be held on July 18<sup>th</sup> & 19<sup>th</sup> , based on the group number.

Your final grade is calculated based on the criteria below,

Your final grade will be calculated based on the points you have accumulated as follows:

A	≥88
B	≥78 but <88
C	≥68 but <78
D	≥58 but <68
F	<58

**Allowed Calculators**

The following will be the only calculators allowed in 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.

These are the same calculators that are currently being allowed in the Fundamental of Engineering (FE) and Professional Engineering (PE) exams (<http://www.ncees.org/exams/calculators/>). It is your responsibility to get acquainted with the features of the calculator you decide to use. I recommend that you use this calculator for all your work (including other courses) since this will help you learn how to use all the features of your calculator.

**Study Guide**

Read the text to be discussed prior to the scheduled class and review the subject thoroughly after the class. Read the textbook carefully. Work on all examples given in the text and solve as many unassigned problems as you can. Expect to spend 10 to 15 after-class hours each week on the subject. Establish a good studying habit, and you will do very well in the class.



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## 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 wristwatch or another electronic device may be worn. Calculators may be subject to inspection. You may be asked to temporarily remove glasses to allow for their inspection.

You may not bring backpacks, hats, or bulky coats 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 the 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 discipline.

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 and 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.

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; this 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.

Scholastic dishonesty on homework, lab assignment, 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 department 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 or by mutual agreement between the instructor and the students.**

H.W. No.	Assigned Problems	
H.W.#1	1-9, 1-12, 1-16, 1-21,1-24	
H.W.#2	2-1c, 2-3, 2-8, 2-11, 2-14	
H.W.#3	3-2, 3-5, 3-6, 3-15b, 3-23, 3-25, 3-18b,3-29	
H.W.#4	3-34b, 3-34c, 3-36,3-37, 3-39a, 3-43,3-45a, 3-53,3-65	
H.W.#5	4-7, 4-10, 4-14, 4-20, 4-21, 4-67,4-80,4-86	
H.W.#6	5-1c, 5-7, 5-16, 5-63, 6-2c, 6-5, 6-16, 6-21,6-40	

**Additional problems may be added to the homework assignments.**