



Mechanical Design

Textbook:	<u>Mechanical Engineering Design: Shigley's 10th ed.</u> by Richard G. Budynas and J. Keith Nisbett
CRN:	28032
Class Meeting:	3:00 - 4:20 pm. MW
Classroom:	Online
Prerequisite:	Mechanicals of Materials
Instructor:	Methaq Abed, Ph.D., P.E.
Office:	Engineering Building, A104
E-mail :	msabed@utep.edu
Office Hours:	Virtual office hours will be conducted through blackboard from 2:30 to 4:30 pm TR, you are welcome anytime to send your questions via email and allow me 24 to 48 hrs to reply. Please enter your name and your class name like (MECH3334) when you enter the online session.

Topics covered

- | | |
|---|-------------|
| 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) |

Grades

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

Mid-term exams (60 %)

Quizzes (10 %)

Homework (10%)

Project (20 %)

There will be three 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 you miss any of the tests, that would be your lowest to be dropped. The exams' grade will be calculated based on the average of the two highest tests.*** The lowest test grade will be dropped.

To comply with the University's new rules due to coronavirus that hits the nation now, exams 2 and 3 will be given online through the blackboard. I will be using the lockdown browser with a webcam for the online exams.

**Exams Date:**Exam #1: Monday, Feb.24thExam #2: Monday, March 30thExam #3: Monday, May 4thDrop/Withdrawal Deadline: Friday, April 3rd, 2020.**Project Due Date:** Wednesday, May 6th.

The submission for the project will be online. There will be one submission per group. If anyone is hard for him or her to communicate with the team, then he/she can submit the project as individual.

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

LockDown Browser + Webcam Requirement

This course requires the use of LockDown Browser and a webcam for online exams. The webcam can be the type that's built into your computer or one that plugs in with a USB cable.

Watch this brief video to get a basic understanding of LockDown Browser and the webcam feature.

<https://www.respondus.com/products/lockdown-browser/student-movie.shtml>

Download Instructions

Download and install LockDown Browser from this link:

<https://download.respondus.com/lockdown/download.php?id=586140509>

Once Installed

- Start LockDown Browser
- Log into Blackboard Learn
- Navigate to the test

Note: You won't be able to access tests with a standard web browser. If this is tried, an error message will indicate that the test requires the use of LockDown Browser. Simply start LockDown Browser and navigate back to the exam to continue.

Guidelines

When taking an online test, follow these guidelines:

- Ensure you're in a location where you won't be interrupted

- Turn off all other devices (e.g. tablets, phones, second computers) and place them outside of your reach
- Before starting the test, know how much time is available for it, and also that you've allotted sufficient time to complete it
- Clear your desk or workspace of all external materials not permitted - books, papers, other devices
- Remain at your computer for the duration of the test
- If the computer, Wi-Fi, or location is different than what was used previously with the "Webcam Check" and "System & Network Check" in LockDown Browser, run the checks again prior to the exam
- To produce a good webcam video, do the following:
 - Avoid wearing baseball caps or hats with brims
 - Ensure your computer or device is on a firm surface (a desk or table). Do NOT have the computer on your lap, a bed, or other surface where the device (or you) are likely to move
 - If using a built-in webcam, avoid readjusting the tilt of the screen after the webcam setup is complete
 - Take the exam in a well-lit room, but avoid backlighting (such as sitting with your back to a window)
- Remember that LockDown Browser will prevent you from accessing other websites or applications; you will be unable to exit the test until all questions are completed and submitted

Getting Help

Several resources are available if you encounter problems with LockDown Browser:

- The Windows and Mac versions of LockDown Browser have a "Help Center" button located on the toolbar. Use the "System & Network Check" to troubleshoot issues. If an exam requires you to use a webcam, also run the "Webcam Check" from this area
- [As applicable, insert information about your institution's help desk, including details about how to contact them. Some help desks want students to run the "System & Network Check" and the "Webcam Check" before they are contacted - and even, to forward the results of these checks at the time of opening a ticket.]
- Respondus has a Knowledge Base available from support.respondus.com. Select the "Knowledge Base" link and then select "Respondus LockDown Browser" as the product. If your problem is with a webcam, select "Respondus Monitor" as your product
- If you're still unable to resolve a technical issue with LockDown Browser, go to support.respondus.com and select "Submit a Ticket". Provide detailed information about your problem and what steps you took to resolve it

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 HP33s and HP35s 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.

ACES & Tutoring Center

Please note there are tutoring services available in the ACES center. Tutoring is free to you; the Department pays them. 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

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.

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.

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, 1-18, 1-21	
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	
H.W.#5	Will be updated	

Additional problems may be added to the homework assignments.