The University of Texas at TYLER
COLLEGE OF ENGINEERING

Department of Mechanical Engineering
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MENG 3309 – Mechanical System Design
Course Syllabus

Semester / Year	Summer 2022
Catalog Description	A required course providing undergraduate mechanical engineering students with fundamentals of an integrated approach for machine design, including an overview of the design process, engineering mechanics, failure theories, and practical design applications. The course includes a project to design and analyze a real-world problem.
Prerequisites	MENG 3303, MENG 3319, and grade C or better in MENG/CENG 3306
Section number	460
Instructor name	Aws Al-Shalash
Contact info	Email: aalshalash@uttyler.edu Voice: Office: HEC A211
Class Type / Location	Online
Class Time	Canvas Access is available 24/7
Office Hours	By appointment
Credits	3 credits
Required Textbook	Budynas and Nisbett, Shigley's Mechanical Engineering Design, 11th Edition, McGraw Hill M-H Connect – Online Homework System – Check Canvas
Optional References	Robert L. Norton, Machine Design: An Integrated Approach, 5th ed
Additional requirements	N/A
Evaluation Method	Mid-term Exam 25% Final Exam 25% Homework 15% Project / Presentation 25% Course Participation 10%
Grading Policy / Scale	Letter grades Scale: A 90 – 100 B 80 – 89 C 70 – 79 D 60 – 69 F < 60
Important events / dates	Census date: July 7th Last day to withdraw: July 27th Midterm date: July 20th Final date: Per published schedule by the registrar – August 5th
Course Learning Outcomes / ABET & PEOs relation	By the end of this course, students should be able to: 1. Determine the stress, strain and deflection of machine elements. 2. Design for combined stresses and stress concentration. 3. Design to avoid fatigue failure against fully reversed and fluctuating cyclic loads. 4. Design of multi-step shafts and calculation of their critical speed 5. Design considering ethical and societal constraints and requirements.

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Homework Policy:

1. The homework problems will be posted on the McGrow Hill Connect Website. The hard-copy of the homework assignment will be scanned and submitted to Canvas. **If the hard-copy is not submitted on the given due date, the assignment credit will be lost.**
2. Students may *discuss* their homework solutions with one another, but each student must submit their own, **independent** solution (i.e. you may not just copy someone else's homework). If you receive assistance from a fellow student on a particular problem, you must cite that assistance in your solution. ***Answer reflecting the solutions manual are not considered correct and will be turned in to the Dean of Students as copying.***

- ✓ All homework should include a clear statement of the problem to be solved, indicating the known and unknown parameters. Engineering paper is preferred.
- ✓ Work should be handwritten on only one side of a standard letter size paper and stapled in the upper, left-hand corner.
- ✓ Draw neat and organized free-body diagrams (FBDs and KBDs), use a straight edge if necessary.
- ✓ Number all equations, indicate and describe variable substitutions and mathematical procedure, and highlight (enclose, or box) your answers.
- ✓ Always indicate appropriate units in answer and study them to determine if it is reasonable.
- ✓ Each problem needs to have the following: Given, Assumptions, Solutions, and a Box around your:

Final Answer *units*

Course/Syllabus Policies:

1. Modifications

The instructor reserves the right to change this syllabus partially or fully at any point in time. Sufficient time and notice will be provided to the class before the activation of the changes.

2. Diversity Statement

Your learning experience in this class is of the utmost importance to me. We all come from diverse backgrounds and experiences, but we are all here for the same goal to further our education and achieve our career goals. Diversity is a good learning tool brought by all students. I intend to conduct this course in a manner respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, religion, race, and culture. I am committed to create an inclusive learning environment in class, so please help me do so by following class norms/guidelines and adhering to the university policies below. All suggestions are welcomed throughout the course and always remember our common goal of learning.