



MENG 3309 - Mechanical System Design
Course Syllabus

Semester / Year	Spring 2023
Catalog Description	Characterization, design, selection, and integration of mechanical systems and components including shafts, bearings, seals, gears, springs, mechanical fasteners, linkages. Three hours of lecture per week.
Prerequisites	MENG 3303, MENG 3319, and grade C or better in MENG/CENG 3306
Section Number	001
Instructor Name	Tahsin Khajah
Contact Information	Email: tkhajah@uttyler.edu Zoom Meeting ID: 903 566 7245 Phone: 903 566 7245
Class Type / Instruction Mode / Location	Face to face / RBN3039
Class Time	Tuesday and Thursday 11:00 am - 12:20 pm
Office Hours	M 3:30 pm – 5:00 pm, Th 2:00 pm – 3:30 pm or by appointment
No. of Credits	3 credits
Required Textbook	McGraw Hill Connect - Budynas and Nisbett, Shigley’s Mechanical Engineering Design, 11th Edition
Optional References	Robert L. Norton, Machine Design: An Integrated Approach, 5th ed
Additional Rules and Requirements	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)
Evaluation Method	Mid-term Exam(s) 25% Final Exam 30% Homework 25% Project / Presentation 20%
Grading Policy / Scale	Letter grades, scale: A: 90 – 100; B: 80 – 89; C: 70 – 79; D: 60 – 69; F: < 60
Important Events / Dates	Check the University academic calendar before entering the dates. Census date: 01/23/2023 Exam date: TBD Last date to withdraw from one or more 15-week courses: 03/23/2023 Final date: TBD
Attendance / Makeup policy / other rules	Regular attendance is required. In case you have to miss a class, it is your responsibility to keep up with the class work and be informed of all announcements made in the class. Homework Assignments: homework will be assigned according with the topics covered in lectures. Assignments are considered very important for the understanding of the course material. Completing your homework independently is an absolute necessity to do well in this course. Canvas: Course syllabus, course material such as handouts and example problems with solutions, homework, assignments, homework solutions,



	review material, exam solutions will all be posted on Canvas. Please review all the material posted on Canvas on a regular basis.
Course Learning Objectives / ABET & PEOs Relation	By the end of this course, students will 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. Select bearings based on design parameters
Tentative Topics / Course Plans	1. Load determination & analysis 2. Stress, strain, and deflection 3. Static and fatigue failure theories 4. Screws, fasteners & design of non-permanent joints 5. Mechanical springs 6. Shafts
University Policies	https://www.uttyler.edu/academic-affairs/files/syllabus_information_2021.pdf