



MENG 3309 - Mechanical Systems 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	030
Instructor Name	Dr. S Maloney
Contact Information	Email: smaloney@uttyler.edu
Class Type / Instruction Mode / Location	Face to face / Room: HEC A217
Class Time	Tuesday and Thursday 06:00 pm - 7:20 pm
Office Hours	Tuesdays 8:00AM to 9:30AM & 11:00AM to 12:30PM 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	N/A
Additional Rules and Requirements	N/A
Evaluation Method	Attendance (5%) Mid-term Exam(s) 40% Final Exam 30% Project / Presentation 25%
Grading Policy / Scale	Letter grades, scale: A: 90 – 100; B: 80 – 89; C: 70 – 79; D: 60 – 69; F: < 60
Important Events / Dates	See UT Tyler Academic Calendar: https://www.uttyler.edu/schedule/files/2022-2023/academic-calendar-2022-2023-main-20221025.pdf
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: <ol style="list-style-type: none">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 speed5. Select bearings based on design parameters
Tentative Topics / Course Plans	<ol style="list-style-type: none">1. Load determination & analysis1. Stress, strain, and deflection2. Static and fatigue failure theories3. Screws, fasteners & design of non-permanent joints4. Mechanical springs2. 6. Shafts
University Policies	https://www.uttyler.edu/academic-affairs/files/syllabus_information_2021.pdf