UTTyler ENGINEERING

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MENG 3309 Mechanical System Design
Course Syllabus

Semester / Year	Summer II / 2026
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	Grade C or better in MENG 3306, and MENG 3319
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	Hybrid – RBN 3038 – Main campus
Class Time	Online lectures
Office Hours	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	Since the mechanical engineering program is designed to prepare students for professional practice, all submitted work (e.g., homework, lab reports, projects, presentations) is expected to meet professional standards. Work that does not reflect professional quality may be subject to grade reductions, even if professionalism is not explicitly listed in the grading rubric. AI tools are allowed to support students' learning and productivity, provided that their use aligns with academic integrity standards. When required, students must disclose their use of AI.
Evaluation Method	Mid-term Exam 25% Final Exam 30% Homework 25% Project / Presentation 20% Exams will be taken in person on the main campus.
Grading Policy / Scale	Letter grades, scale: A: 90 – 100; B: 80 – 89; C: 70 – 79; D: 60 – 69; F: < 60
Important Events / Dates	Final Exam date: August 7
Attendance / Makeup policy / other rules	Mechanical System Design is one of the challenging courses in engineering. Regular participation is imperative if you want to do well in this course. **It is your responsibility to stay updated with the course material and announcements posted on Canvas on assignments, exams, etc.** There will be No makeup exam without documented justification and prior agreement!

Course Learning Objectives / ABET & PEOs Relation	By the end of this course, students should be able to: • Determine the stress, strain and deflection of machine elements. • Design for combined stresses and stress concentration. • Design to avoid fatigue failure against fully reversed and fluctuating cyclic loads. • Design of multi-step shafts and calculation of their critical speed • 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/offices/academic-affairs/faculty-resources/syllabus-information/