

**MENG 3309 Mechanical System Design**  
**Course Syllabus**

<b>Semester / Year</b>	Spring 2026
<b>Catalog Description</b>	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.
<b>Prerequisites</b>	Grade C or better in MENG/CENG 3306, and MENG 3319
<b>Section Number</b>	001
<b>Instructor Name</b>	Tahsin Khajah
<b>Contact Information</b>	Email: tkhajah@uttyler.edu Zoom Meeting ID: 903 566 7245 Phone: 903 566 7245
<b>Class Type / Instruction Mode / Location</b>	Face to face – RBN 3038 – Main campus
<b>Class Time</b>	TuTh 9:30AM - 10:50AM
<b>Office Hours</b>	M 3:30 pm – 5:00 pm, Th 2:00 pm – 3:00 pm or by appointment.
<b>No. of Credits</b>	3 credits
<b>Required Textbook</b>	McGraw Hill Connect - Budynas and Nisbett, Shigley's Mechanical Engineering Design, 11th Edition
<b>Optional References</b>	Robert L. Norton, Machine Design: An Integrated Approach, 5th ed
<b>Additional Rules and Requirements</b>	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.
<b>Evaluation Method</b>	Mid-term Exams 25% Final Exam 30% Homework 25% Project / Presentation 20%
<b>Grading Policy / Scale</b>	Letter grades, scale: A: 90 – 100; B: 80 – 89; C: 70 – 79; D: 60 – 69; F: < 60
<b>Important Events / Dates</b>	Census date: Jan 26 Last date to withdraw from one or more 15-week courses: March 30 Final Exam date: Thursday, April 30 - 9:30 a.m.-11:30 a.m.
<b>Attendance / Makeup policy / other rules</b>	Mechanical System Design is one of the challenging courses in engineering. Regular participation is imperative if you want to do well in this course. <b>It is your responsibility to stay updated with the course material and announcements posted on Canvas on assignments,</b>

	<b>exams, etc.</b> There will be <u>No makeup exam without documented justification and prior agreement!</u>
<b>Course Learning Objectives / ABET &amp; PEOs Relation</b>	<p>By the end of this course, students should be able to:</p> <ul style="list-style-type: none"> <li>• Determine the stress, strain and deflection of machine elements.</li> <li>• Design for combined stresses and stress concentration.</li> <li>• Design to avoid fatigue failure against fully reversed and fluctuating cyclic loads.</li> <li>• Design of multi-step shafts and calculation of their critical speed</li> <li>• Select bearings based on design parameters</li> </ul>
<b>Tentative Topics / Course Plans</b>	<ol style="list-style-type: none"> <li>1. Load determination &amp; analysis</li> <li>2. Stress, strain, and deflection</li> <li>3. Static and fatigue failure theories</li> <li>4. Screws, fasteners &amp; design of non-permanent joints</li> <li>5. Mechanical springs</li> <li>6. Shafts</li> </ol>
<b>University Policies</b>	<a href="https://www.uttyler.edu/offices/academic-affairs/files/syllabus-information-rev122025.pdf">https://www.uttyler.edu/offices/academic-affairs/files/syllabus-information-rev122025.pdf</a>