

**MENG 3306 – Mechanics of Materials**  
**Course Syllabus**

<b>Semester / Year</b>	Fall 2024								
<b>Catalog Description</b>	Stress and strain; uniaxially loaded members; centroids and area moments of inertia; normal and shear stresses; beam deflections; buckling of columns; pressure vessels; combined stresses; failure criteria. Three hours of lecture per week.								
<b>Prerequisites</b>	Grade C or better in ENGR/EENG 2301 Mechanics - Statics								
<b>Section Number</b>	001								
<b>Instructor Name</b>	Dr. Hamed Hosseinzadeh								
<b>Contact Information</b>	Email: <a href="mailto:Hamed@UTTyler.edu">Hamed@UTTyler.edu</a>								
<b>Class Type / Instruction Mode / Location</b>	F2F Ratliff Building North 03038								
<b>Class Time</b>	TuTh 9:30AM - 10:50PM								
<b>Office Hours</b>	Tuesday: 11:00 am - 12:30 pm, Thursday: 11:00 am – 12:30 pm or by appointment								
<b>No. of Credits</b>	3								
<b>Required Textbook</b>	Mechanics of Materials, 10th edition, by Russell C. Hibbeler								
<b>Optional References</b>	N/A								
<b>Additional requirements</b>	Students are permitted to use AI tools like ChatGPT, Copilot, and similar programs for specific assignments as designated by the instructor in this course.								
<b>Evaluation Method</b>	<table border="0"> <tr> <td><b>Homework</b></td> <td align="right"><b>15 %</b></td> </tr> <tr> <td><b>Mid Exam</b></td> <td align="right"><b>30 %</b></td> </tr> <tr> <td><b>Project</b></td> <td align="right"><b>15 %</b></td> </tr> <tr> <td><b>Final Exam</b></td> <td align="right"><b>40 %</b></td> </tr> </table>	<b>Homework</b>	<b>15 %</b>	<b>Mid Exam</b>	<b>30 %</b>	<b>Project</b>	<b>15 %</b>	<b>Final Exam</b>	<b>40 %</b>
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<b>Grading Policy / Scale</b>	Letter grades: 90-100: A, 80-89: B, 70-79: C, 60-69:D, 0-59: F Note: <b>89.4 == B</b>								
<b>Important events/dates</b>	<a href="https://www.uttyler.edu/schedule/files/2024-2025/academic-calendar-2024-2025-main-20240222.pdf">https://www.uttyler.edu/schedule/files/2024-2025/academic-calendar-2024-2025-main-20240222.pdf</a>								
<b>Attendance / Makeup policy / other rules</b>	Attendance at every class meeting is strongly encouraged. There will be no makeup for missed in-class work. An opportunity to make up a missed exam may be available to students with a university-validated and excused absence. If you have a valid reason to be absent and know ahead of time, you can discuss possible accommodations directly with the instructor.								
<b>Course Learning Objectives / ABET &amp;</b>	By the end of this course, students will be able to: 1. Use external loads including axial force, moment, torque, shear force to determine internal forces and moments for a variety of structures and structural elements.								

<b>PEOs Relation</b>	<p>2. Determine the state of stress at a point different stress configurations and combined loading and find principal stresses and directions both analytically and graphically using the Mohr's circle diagram.</p> <p>3. Relate stress to strain using material properties and analyze the state of strain at a point and use strains to calculate deformations.</p> <p>4. Design shafts and beams and use load-deformation equations and other methods to calculate beam deflections.</p>
<b>Tentative Topics / Course Plans</b>	<ol style="list-style-type: none"> <li>1. Normal and shear stress</li> <li>2. Normal and shear strain</li> <li>3. Mechanical properties of materials</li> <li>4. Axial load</li> <li>5. Torsion</li> <li>6. Bending</li> <li>7. Stress and strain transformation</li> <li>8. Beam and shaft design</li> <li>9. Deflections of beams and shafts</li> </ol>
<b>University Policies</b>	<p><a href="https://www.uttyler.edu/offices/academic-affairs/files/syllabus-information.pdf">https://www.uttyler.edu/offices/academic-affairs/files/syllabus-information.pdf</a></p>