MECH 5312: Solid Mechanics II

Class Reference Number: 23720

Textbook: None

Required Software: PTC MathCAD and Excel

References: A First Course in Continuum Mechanics, Y. C. Yung
Continuum Mechanics, D.S. Chandrasekharaih
Advanced Mechanics of Materials, R. Colecki, R. J. Conant

Class/Lab Meeting: TR, 11:35 am to 12:55 pm

Class Room: Quinn Hall 203

Instructor: Dr. Calvin M. Stewart, Ph.D.
Department of Mechanical Engineering
Office: A117
E-mail: cmstewart@utep.edu
Phone: 407-747-6179
Office Hours: MWF 10:00am – 4:00pm, or by appointment

Course Objectives
Advanced topics in solid mechanics; inelastic material response; continuum mechanics; fracture mechanics; computational mechanics; finite elasticity; micro-mechanics.

Topics Covered
Algebra of Tensors, Calculus of Tensors, Continuum Hypothesis, Deformation, Motion, Stress, Exam 1, Euler’s Equations, Elasticity, Plasticity, Viscoplasticity, Unified Viscoplasticity, Creep, Exam 2, Finite Element Analysis, Mechanical Testing

Grades

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>30%</td>
</tr>
<tr>
<td>Midterm Exams (2)</td>
<td>40%</td>
</tr>
<tr>
<td>Laboratory</td>
<td>30%</td>
</tr>
</tbody>
</table>