

Branch Name:	Civil Engineering (Structural Engineering)
Semester/Year:	Semester I / First Year
Subject Title:	Advanced Solid Mechanics Practical
Subject Code:	2ET2060105P
Pre-requisite Subject:	Mechanics of Solids and Structural Analysis

Course Objective:

1. To analyze the transformation of stresses and strains in 2D & 3D.
2. To study engineering properties of materials, force-deformation, and stress-strain relationship.
3. To understand the plastic behaviour of deformable bodies.

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-	-	-	10	25	10	25	50

List of Experiments :

1. Tensile test on mild steel
2. Compression test on utm
3. Transverse test on utm
4. Determination of impact strength of steel (by charpy test)
5. Determination of impact strength of steel (by izod test)
6. Brinell hardness test
7. Rock well hardness test
8. Vickers hardness test
9. Fatigue test
10. Ultrasonic flaw detection

List of References:

1. Theory of elasticity N. Filonenko - Borodich
2. Theory of elasticity - S. P. Timoshenko and J.N. Goodier
3. Buckling of bars, plates and shells - Don O. Brush and B. O. Almorth
4. Theory of elastic stability - S. P. Timoshenko and J.M. Gere
5. Principles of structural stability theory - Chajes
6. Structural stability of plates and shells - N.G.R. Iyengar
7. An introduction to elastic stability to structure - G.J. Siitses.