

1.	Title of the course	Mechanics of Solids
2.	Course number	ME207L
3.	Structure of credits (L-T-P-C)	2-1-0-3
4.	New course/modification to	Modified with ME202M/STRENGTH OF MATERIALS
5.	To be offered by	Mechanical Engineering
6.	Prerequisite	None
7.	<b>Course Objective(s):</b> To discuss the concepts of force equilibrium, stress, strain, constitutive relations, and momentum balance relations for deformable solids. To analyze the members subjected to axial load, flexure (beams), torsion (shear) and compression (columns) in engineering applications.	
8.	<b>Course Content:</b> Equations of static equilibrium; Stresses, strains and constitutive relations; Strain energy; Axially loaded members; Torsion of circular bars; Coordinate transformation of stresses and strains, principal stresses, principal strains, Mohr's circle; Stress analysis of thin walled pressure vessels; Bending of beams: shear force and bending moment diagrams, deflection of beams, shear centre; Buckling of columns: Euler's buckling theory.	
9.	<b>Textbook(s):</b> 1. Hibbeler R C, Mechanics of Materials, 10th Edition, Pearson Education (2016). 2. Gere J M and Timoshenko S P, Mechanics of Materials, 2nd Edition, CBS Publishers (2004).	
10.	<b>Reference(s):</b> 1. Crandall S H, Dahl N C and Lardner T J, An Introduction to the Mechanics of Solids, 3rd Edition, McGraw-Hill Publishing Company (2012). 2. Popov E P, Mechanics of Materials, 2nd Edition, Pearson Education (2016).	