

Course No.	Course Name	L-T-P-Credits	Year of Introduction
CE230	MATERIAL TESTING LAB	0-0-3-1	2016
Course Objectives:			
<ol style="list-style-type: none"> To provide knowledge on mechanical behaviour of materials To acquaint with the experimental methods to determine the mechanical properties of materials. 			
Syllabus			
List of experiments:			
<ol style="list-style-type: none"> Tension test on mild steel/ tor-steel/ high strength steel and cast iron using Universal Testing Machine and extensometers. Tests on springs (Open and closed coiled) Torsion pendulum (mild steel, aluminium and brass wires) Hardness test (Brinell, Vickers and Rockwell) Impact test (Izod and Charpy) Torsion test on mild steel rods. Shear test on mild steel rods. Fatigue test – Study of testing machine. Bending test on wooden beams. Strut test (Column buckling experiment) Verification of Clerk Maxwell's law of reciprocal deflection and determination of Young's modulus of steel. Photo elastic methods for stress measurements. Jominy hardenability test Measurement using strain gauges Determination of moment of inertia of rotating bodies 			
Note: A minimum of 10 experiments are mandatory.			
Expected outcome: At the end of the course the students will be able to			
<ol style="list-style-type: none"> Acquire the knowledge on mechanical behaviour of materials Conduct experiments determine the mechanical properties of materials. 			
References Books:			
<ol style="list-style-type: none"> G E Dieter. Mechanical Metallurgy, McGraw Hill,2013 Dally J W, Railey W P, Experimental Stress analysis , McGarw Hill,1991 Baldev Raj, Jayakumar T, Thavasimuthu M., Practical Non destructive testing, Narosa Book Distributors,2015 			