ADVANCED MECHANICAL DESIGN LAB

Subject Code: 13ME2213

L	P	C
0	3	2

Course Outcomes:

At the end of lab, a student will be able to

CO1: Perform bending test, tension test on steels and validate the of numerical bending analysis results with experimental test results

CO2: Prepare the fibre composites using hand lay-up method and analyse the composite parts using FEA package

CO3: Demonstrate the gyroscopic effect and estimate the torsional fatigue strength of steels

CO4: Calculate the natural frequency of spring and spring-mass damper system

CO5: Demonstrate the static and dynamic balancing and estimate the unbalanced mass on the given rotational components

Note: Any **TEN** exercises from the following

1. Vibration measurements
2. Universal Testing Machine– Bending test
3. Composite Fabrication – Hand lay-up
4. Fatigue Testing Machine – Bending
5. Gyroscope
6. Static and dynamic balancing
7. Design of parts of IC Engine – crankshaft, connecting rod, piston, valve gears
8. Design of power transmission systems – complete design of belt drive and gear reducer and Drafting.
9. Creep test
10. Experiments using strain gauges
11. Load cell and strain gauge based study on cantilever
12. Inductive Pick up Strain Gauge based study on cantilever