



**TONTADARYA COLLEGE OF ENGINEERING, GADAG.**

**DEPARTMENT OF MECHANICAL ENGINEERING**



**SEMESTER: III/IV**

**MATERIAL TESTING LABORATORY**

**CARPET AREA : 100 Sq Mts**

**TOTAL COST : Rs. 8,78,737**

**LIST OF EQUIPMENTS**

<b>Sl. NO</b>	<b>PARTICULARS</b>	<b>QTY</b>
1	Universal testing machine	01
2	Torsion testing machine.	01
3	Izod and Charpy impact test equipment.	01
4	Brinell and Rockwell Hardness testing equipment.	01
5	Vickers Hardness testing equipment.	01
6	Wear testing machine.	01
7	Fatigue Test machine.	01
8	Optical microscope with computer interface.	02
9	Magnetic flaw detector and Dye penetration test.	01
10	Sand belt polishing machine	01
11	Micro polishing machine	01
12	Specimen mounting machine	01
13	Muffler furnace	02

**STAFF IN-CHARGE**

**Dr. D M Goudar**

**H O D**

**Prof. M R Alavandi/Prof. Rudramuni**

**Faculty In-Charge**

**Mr. B C Goudar**

**Instructor**



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**LIST OF EXPERIMENTS**

**Sub Code: 15/17/18MEL37A/47A**

**IA Marks: 20/40**

**Hours/Week: 03**

**Exam Hours: 03**

**Total Hours: 42**

**Exam Marks: 80/60**

**PART-A**

- 1** Preparation of specimen for Metallographic examination of different engineering materials. To report microstructures of plain carbon steel, tool steel, gray C.I, SG iron, Brass, Bronze & composites.
- 2** Heat treatment: Annealing, normalizing, hardening and tempering of steel. Metallographic specimens of heat treated components to be supplied and students should report microstructures of furnace cooled, water cooled, air cooled, tempered steel.
- 3** Brinell, Rockwell and Vickers's Hardness tests on untreated and heat treated specimens.
- 4** To study the defects of Cast and Welded components using Non-destructive tests like:
  - a. Ultrasonic flaw detection
  - b. Magnetic crack detection
  - c. Dye penetration testing.

**PART-B**

- 5** Tensile, shear and compression tests of steel, aluminum and cast iron specimens using Universal Testing Machine.
- 6** Torsion Test on steel bar
- 7** Bending Test on steel and wood specimens.
- 8** Izod and Charpy Tests on Mild steel and C.I Specimen.
- 9** To study the wear characteristics of ferrous and non-ferrous materials under different parameters.
- 10** Fatigue Test (demonstration only).

