

# Mechanical Engineering, III-Semester

## Materials Technology

### List of experiments:

1. Metallographic studies – Study of Optical microscope, optically flat surface preparation, etching reagents, Grain size- ASME no., micro structures, Image analysis, Standard specimen,
2. Carbon, sulphur, Phosphorus determination, Strauhlin's apparatus, Eggert's Method in Different samples.
3. Hardness and Hardenability test, Jeremy Cony test. Soft and hard Martensite.
4. Different heat treatment cycles using electric furnace [ Programmable preferred ],  
Annealing, Case carburising, Normalising, etc.
5. Gravimetric / Volumetric - chemical analysis of alloying elements like, Cr, Ni, Mn, Si etc.
6. Study of different instrumental method of analysis, spectrophotometers, Differential Scanning calorimeter,
7. Spot test for quick assessment of alloying elements like Mn, Cr, Ni, etc.
8. Experiments / study of Non Destructive Methods, Ultrasonic test, Magnetic particle Inspection, Dye penetration test, Eddy current test, Radiography test.
9. Cupping test / formability test for sheet metal