ME 216 Mechanical Engineering Laboratory I (0-0-3-3)

Strength of materials: Tensile testing, hardness, torsion, beam bending, photoelasicity, beam deflection, column buckling, thin cylinder, fatigue testing and impact testing.

Material Sc.: Microscopic techniques, determination of volume fraction of different phases in material including metals, estimation of grain sizes, study of heat affected regions in welded steel specimen, effect of different medium cooling on hardness, microstructure study of MS hardened through different medium cooling, Introduction to crystallography, measurement of residual stress, indentation creep, 3D printing.

Fluid Mechanics and hydraulics: Free and Forced Vortex, Head Losses in Piping System, Flow through restrictive passage such as Venturimeter/ Orificemeter etc., Air Flow Bench (Drag Force measurement on cylindrical bodies, Bernoulli's Equation applied to a Convergent-Divergent passage, Round Turbulent Jet, Flow around a bend in a duct).