

LABORATORY FACILITIES

ENGINEERING PRACTICES LAB

Engineering Practices Laboratory provides exposure to the students with hands on experience on various basic engineering practices in mechanical engineering. It has Carpentry Shop, Fitting Shop, Smithy & Foundry Shop, and Sheet metal shop, Welding shop equipped with the facilities such as High Precision ARC Welding Transformer, Centre Lathe, Gas Welding & Cutting Set, Bench Grinder, Hand Shearing Machine, and Brazing Machine.

STRENGTH OF MATERIALS LABORATORY

The Strength of Materials Laboratory was established with the objective to demonstrate the basic principles in the area of mechanics of materials to the undergraduate students through a series of experiments. The experiments are performed to acquire knowledge about strength and related characteristics, nature of materials and other properties such as Compression, Tension, Flexure, Hardness, Impact Strength, Torsion, Young's modulus of various materials (Steel / Copper / Brass / Aluminium).

List of Major Equipment's

- Computerized UTM (400 KN)
- Double Shear Test
- Torsion Test
- Impact Test
- Hardness Test (Brinell & Rockwell)
- Deflection Test

MANUFACTURING TECHNOLOGY-I & II LABORATORY

The Manufacturing Technology laboratory was equipped with Centre Lathe, Heavy Duty Shaping Machine, Radial Drilling Machine, Surface Grinding Machine, Tool & Cutter Grinder Machine, Universal Milling Machine, Vertical Milling Machine, Gear Hobbing Machine, Cylindrical Grinding Machine, Turret Lathe, Capstan Lathe, Horizontal Milling Machine, Lathe and Milling Tool Dynamometer, Gear Shaping Machine, Centreless Grinding Machine.

FLUID MECHANICS AND MACHINERY LABORATORY

The Fluid mechanics and machinery intended to make the students aware of the all the aspects which come under the fluid flow. The dynamics of fluids is introduced through the control volume approach, which gives an integrated understanding of the transport of mass, momentum and energy. The applications of the conservation of laws to flow through pipes and hydraulics machines are studied.

List of Major Equipment's

- Flow channel setup
- Venturi-meter
- Orifice-meter
- Rotameter
- Centrifugal Pump(Single &Multi stage)
- Reciprocating Pump
- Impulse Turbine
- Francis Turbine

THERMAL ENGINEERING LAB I & II

The Thermal Engineering laboratory was fully equipped with Four Stroke Diesel Engines(Mechanical Loading, Electrical Loading), Apparatus for Flash & Fire point, Single Cylinder Petrol Engine with Data Acquisition system, Steam Boiler with Turbine Setup, Reciprocating Air Compressor, Guarded Plate Apparatus, Lagged Pipe Apparatus, Natural Convection-Vertical Cylinder Apparatus, Forced Convection Inside Tube Apparatus, Composite Wall Apparatus, Thermal Conductivity of Insulating Powder Apparatus, Pin-Fin Apparatus, Stefan-Boltzmann Apparatus, Emissivity Measurement Apparatus, Parallel/Counter Flow Heat Exchanger Apparatus, Refrigeration TestRig and Air-Conditioning Test Rig.

DYNAMICS LABORATORY

The Dynamics Laboratory was equipped with Cam Follower Setup, Motorized Gyroscope, Governor- Watts,Porter,Proelland Hartnell Whirling of Shaft, Dynamics Balancing Machine, Two Rotor Vibration Setup, Spring Mass Vibration System, Torsional Vibration of Single Rotor and Double Rotor System Setup, Gear Models:Spur,Helical, Bevel and Worm Gear, Four Bar Mechanism (Crank Rocker,Double Crank, Double Rocker Mechanism),Slider Crank Mechanisms, Oscillating Cylinder Mechanisms, Turn Table Apparatus, Transverse Vibration Setup of – Cantilever, Free-Free Beam, Simply Supported Beam, Flywheel Axel System, Gear Trains (Simple,Compound,Epicyclic,Differential),Kinematics of Universal Joints (Single Universal Joints, Double Universal Joints),Bifilar Suspension System, Compound

Pendulum, Vibration Absorber, Spring Mass System-(Single Degree and Multi Degree Freedom) Undamped and Damped Vibration, Balancing Rotating Masses, Balancing Reciprocating Masses and Vibrating Table.

METROLOGY AND MEASUREMENT LABORATORY

The Metrology and Measurement Laboratory is to familiarise the students with different sophisticated measurement equipment/instruments such as Coordinate Measuring Machine, Surface Finish Measuring Equipment, Tool Makers Microscope, Profile Projector, Vibration Measuring Setup, Vernier Calliper, Vernier Height Gauge, Vernier Depth Gauge, Slip Gauge Set Gear Tooth Vernier, Sine Bar, Floating Carriage Micrometre, Mechanical Comparator, Electrical Comparator, Pneumatic Comparator, Autocollimator, Temperature Measuring Setup, Force Measuring Setup, Torque Measuring Setup, Bore Gauge, Telescope Gauge, Bevel Protractor, Displacement Measuring Setup, Micrometre and Sine Centre.

MECHATRONICS LABORATORY

The Mechatronics Laboratory was established with an objective to gain practical experience in automation field. Mechatronics Lab has equipped with 21 high end latest Configuration Computer Systems. Mechatronics lab is equipped with Pneumatic trainer kits along with Electro Pneumatic, PLCBasic Hydraulic Trainer kit Pressure, Temperature and Flow type transducers, 8085 microprocessor kits, 8051 microcontroller kits, image processing setup and printer.

CAD/CAM LABORATORY:

The CAD/CAM Laboratory was established with an objective to gain practical experience in handling 2D drafting and 3D modelling software systems with an exposure to modern control systems in CNC Machines. CAD Lab has equipped with 50 high end latest Configuration Computer Systems. CAM laboratory is equipped with CNC production Lathe, CNC production Milling machine. CNC - Semi Production Lathe Machine, CNC - Semi Production Milling Machine, 3D Printer, Laser Printer, Scanner, A3 Plotter. Various software package which facilitates the students to do simulation based experiments, assignments and projects.