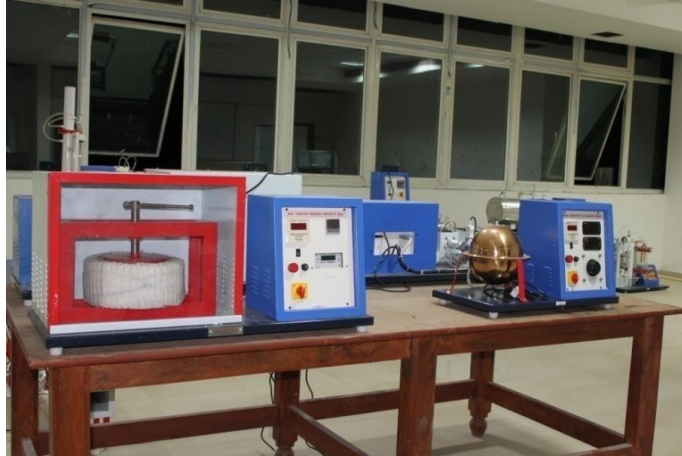


Laboratory & Resources

Mechanical engineering department has well established laboratories of Heat and mass transfer, Thermodynamics, Theory of machine, Fluid mechanics and hydraulics, Strength of material, Manufacturing science, Measurement and metrology, Machine drawing. Labs are equipped with apparatus like digital and analog Universal Testing Machine for tension, Torsion testing Machine, Rockwell, Brinell, Impact Testing Machine and Fatigue Testing Machine, Natural Convection Heat Transfer, Emissivity Measurement Apparatus, Heat Transfer through Composite wall, Pelton wheel turbine test rig, Francis turbine test rig, Synchromesh gear box, Balancing M/c for Rotating & Reciprocating Masses etc.

Heat and Mass Transfer

- Composite wall.
- Heat transfer through insulating medium.
- Heat transfer in a pin fin.
- To demonstrate the super thermal conductivity of heat pipe and to compare its working with best conductor i.e. Cu pipe and SS pipe.
- Heat transfer in shell and tube heat exchanger.
- Heat transfer phenomena in parallel/ counter flow arrangements.
- Heat transfer in natural convection.
- Heat transfer in forced convection.
- Radiation heat transfer by black plate and test plate.
- Critical flux in a pool boiling apparatus.
- Heat transfer through conduction in insulating powder.
- Heat transfer through liquid.
- Heat transfer in the process of condensation.
- Radiation heat transfer by black body and to study the effect of hemisphere temperature on it.



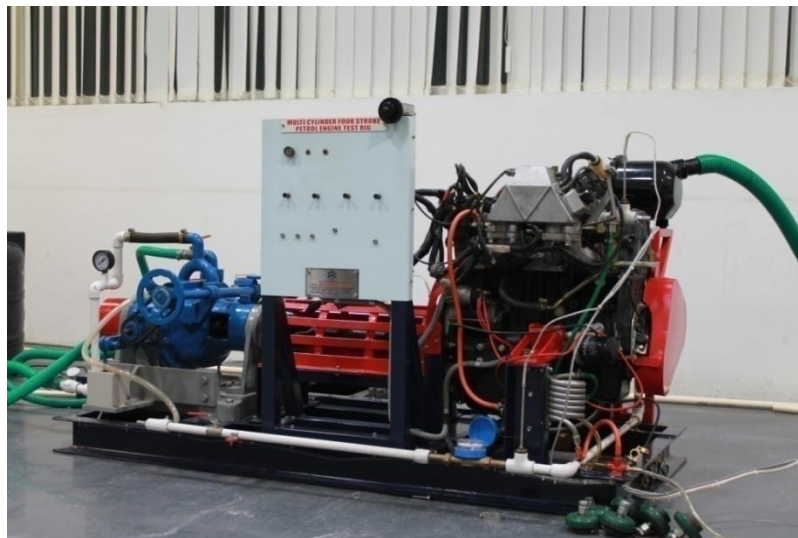
Theory of Machine

- Study of Governors (Porter, Proell, Hartnell, Watt)
- Gear tooth profiles.
- Universal vibration apparatus (Relation of simple pendulum, Radius of gyration 'k' of a given compound pendulum, Torsional vibration of single rotor system, Dunker ley's rule, Forced vibration of equivalent spring mass system, Forced vibration of the beam for different damping).
- Static & Dynamics balancing system.



Thermodynamics and I.C. Engines

- Cut section of 2 stroke petrol engine
- Cut section of 4 stroke petrol engine
- Cut section of 2 stroke diesel engine
- Cut section of 2 stroke diesel engine
- Cut section of steam boiler
- 4 cylinder Petrol engine
- Compressor
- Synchromesh gear box



Fluid Mechanics and Fluid Machinery

- Pelton wheel turbine test rig
- Francis turbine test rig
- Kaplan turbine test rig
- Reciprocating pump
- Ram jet
- Centrifugal pump
- Venturi-meter and Orifice meter
- Pipe Friction apparatus
- Flow through Orifice and Mouth Piece
- Bernoulli's Apparatus
- Flow through Notches
- Pitot tube with manometer







Strength of Material

- Universal Testing M/c
- Tensile Testing
- Fatigue Tester
- Torsion Testing
- Rockwell and Brinell Hardness Tester



Measurement and Metrology

- Rotameter
- Differential pressure measurement apparatus

Workshop

Workshop forms an integral part of the department of mechanical engineering as it is heavily involved in carrying out the manufacturing activities with the help of some sophisticated equipments for the research activities in the department as well as for the undergraduate training on workshop courses for the students throughout the institute in every semester. With the assistance of quality supporting staff, students are able to carry out the fabrication work for their projects or learning point of view.

Following are the shops/machines in this lab:

1. Welding Shop
2. Turning Shop
3. Machine Shop
4. Carpentry Shop
5. Fitting Shop
6. Sheet Metal Shop

Photos of Machines from workshop



Grinding Machine



Power Hacksaw



Lathe Machine



Drilling Machine