

अन्तर्दहन इंजन प्रयोगशाला Internal Combustion Engine Lab

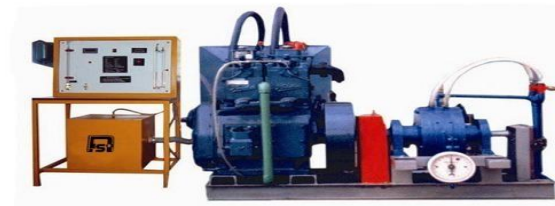
Major Equipments:

- Single cylinder two stroke petrol engine test rig with Eddy current dynamometer
- Single cylinder four stroke petrol engine test rig with electric generator
- Four cylinder four stroke diesel engine test rig with hydraulic dynamometer
- Test rig with hydraulic dynamometer
- Air compressor test rig
- Computerized test rig for SI / CI engine with rope break dynamometer
- Smoke Meter with printer attachment.
- Exhaust Gas Analyzer
- BMW Engine with Transmission unit
- Single cylinder gasoline engine
- I C engine cut – section Models
 - Multi cylinder petrol engine
 - Multi cylinder diesel engine
- Demonstration models
 - Fuel system
 - Lubrication, ignition system
 - Transmission system



Measuring Instruments:

Ammeter, Voltmeter, Engine indicator,
Stop watch, Bomb Calorimeter
Tachometer, Water meter (Dial type),
Pressure gauge tester, Nozzle tester
Hydrometer, Thermometer, Dial thermometer



In Charge

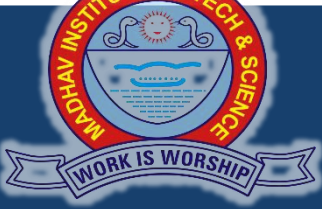
Prof. Bhupendra Kumar Pandey
(9174426657)

Associate In Charge:

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Physical In Charge:

Er. Sunil Kumar
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Internal Combustion Engine

SAFETY AND SECURITY RULES TO BE FOLLOWED IN LABORATORY:

1. Always wear shoes before entering in the lab.
2. Do not touch anything without the permission of instructor/ lab assistant.
3. Read carefully the lab manual before performing experiments.
4. Do not tamper measuring instruments.
5. Do not open the casing of the equipment.
6. Switch off the power supply to the experimental setup on completion of the experiment.
7. Maintain clean and orderly laboratories and work area.
8. Be aware of the various experiment controls (start button, stop button, speed control) for each experiments.
9. Do not leave experiments running unattended.
10. Any injuries should be reported immediately for proper care.

GENERAL INSTRUCTIONS

1. Enter in lab with closed footwear.
2. Boys should tuck in the shirts.
3. Long hair should be protected, let it not be loose specially near rotating machineries.
4. Any other machines/ equipments should not be operated other than the prescribed one for that day.
5. Power supply to your test table should be obtained only through the lab technician/ instructor.
6. Read carefully the lab manual before performing experiments.
7. Do not lean and do not be close to the rotating components.
8. Tools, apparatus and gauge sets are to be returned before leaving the laboratory.
9. Headings and detail should be neatly written:
 - (i) Aim of the Experiment.
 - (ii) Apparatus / Tools / Instruments Required.
 - (iii) Procedure / Theory / Algorithm/ Program.
 - (iv) Model Calculations.
 - (v) Neat Diagram/ Flowcharts.
 - (vi) Specification / Design Details.
 - (vii) Tabulation.
 - (viii) Graph.
 - (ix) Result / Discussions.
10. Before doing the experiment, the student should get the circuit/ program approval by the faculty in charge.
11. Experiment date should be written in the appropriate place.
12. After completing the experiments the answer to the viva voice questions should be neatly written in the workbook.



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Internal Combustion Engine

(190303/BMEL505)

LIST OF EXPERIMENTS:

1. Disassembly and Assembly of Engines
2. Study and drawing of engine components with dimensions.
3. Experimental Study of S.I. Engine with alternative fuels.
4. Experimental Study on C.I. Engines with alternative fuels.
5. Experimental Study on the effect of fuel injection pressure on the Engine
6. Performance, Heat Transfer and Emission Characteristics.
7. Experimental Study on the effect of preheating air and fuel on Engine
8. Performance, Heat Transfer and Emission Characteristics.
9. Determination of Volumetric efficiency and Equivalence ratio in a single cylinder D.I. Diesel engine.
10. Determination of Flash and Fire point of various fuel blends.
11. Determination of viscosity of various fuel blends.