3/4 B.Tech. FIFTH SEMESTER

ME5L1 **FUELS & IC ENGINES LAB** **Credits: 2**

Lecture:- - **Internal assessment: 25marks**
Practice: 3 periods/week **Semester end examination: 50 marks**

Objectives:

1. Analyze the calorific values of different types of solid, liquid and gaseous fuels by using bomb calorimeter and junker's gas calorimeter
2. Estimate the quality of the fuels by using Canradson's carbon residue tester
3. Interpret the basic concepts in the area of IC engines and other power input devices of thermal engineering field
4. Evaluate the performance of various types of petrol, diesel engines and reciprocating air compressor

Learning outcomes:

At the end of course the students will have:

1. Calculate calorific values among different types solid, liquid and gaseous fuels
2. Evaluate quality of the fuels by estimating the carbon residue of the fuel
3. Test and evaluate performances on different types of petrol engine and diesel engines
4. Experiment the performance test on compressors

Pre-Requisite

IC Engines and gas turbines

FUELS LAB :

1. Junker's gas calorimeter
2. Bomb Calorimeter
3. Canradson's Carbon Residue Tester

I.C. ENGINES LAB :

1. I.C. Engines Valve / Port Timing Diagrams
2. I.C. Engines Performance Test(4 -Stroke Diesel Engines)
3. I.C. Engines Performance Test on 2-Stroke Petrol
4. Evaluation of Engine friction by conducting Morse test on 4-Stroke Multi cylinder Petrol Engine and retardation test on diesel engine.
5. I.C. Engines Heat Balance.
6. I.C.Engines Air/Fuel Ratio and Volumetric Efficiency
7. Performance Test on Reciprocating Air – Compressor Unit
8. Study of Boilers
9. Dis-assembly / Assembly of Engines.