III B.TECH - I SEMESTER
FUELS & IC ENGINES LAB

Course Code: ME5L1 **Credits: 2**
Lecture: - **Internal assessment: 25 marks**
Practice: 3 periods/week **Semester end examination: 50 marks**

COURSE OBJECTIVES:

- Determine the calorific value of different types of solid, liquid and gaseous fuels by using bomb calorimeter and Junker's gas calorimeter and to estimate quality of the fuel using canradson's carbon residue tester.
- Evaluate the performance of various types of petrol, diesel engines and reciprocating air compressor, study of boilers.

COURSE OUTCOMES:

Upon the completion of this course the student will be able to:

1. Test the performance of different types of petrol engine and diesel engine
2. Assess the performance of reciprocating air compressor, boilers, disassembly and assembly of engine.
3. Calculate calorific values among different types of solid, liquid and gaseous fuels.
4. Measure the quality of the fuel by estimating the carbon residue of the fuel.

Pre Requisites : IC engines and gas turbines

ANY 12 EXPERIMENTS FROM THE FOLLOWING

I.C. Engines Lab

1. I.C. Engines valve/ port time diagram
2. I.C. Engines Performance Test (4-stroke Diesel Engines)
3. I.C. Engines Performance Test on 2-stroke petrol engine
4. Evaluation of Engine friction by conducting Morse test on 4-stroke Multi cylinder petrol Engine
5. Retardation test on diesel engine
6. I.C. Engines Heat Balance
7. I.C. Engines Air/Fuel Ratio and Volumetric Efficiency
8. Performance test on computer based 4 stroke multi cylinder petrol engine
9. Performance Test on Reciprocating Air-Compressor unit
10. Study of Boilers
11. Disassembly/Assembly of Engines.

Fuels Lab :

1. Junker’s gas calorimeter
2. Bomb calorimeter
3. Canradson’s carbon residue tester