

FUELS AND IC ENGINES LAB

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|---------------------------------------|-------------------|--------------------------------|-------|----------------------|-----|
| Course code | 20ME3451 | Year | II | Semester | II |
| Course category | Professional Core | Branch | ME | Course Type | Lab |
| Credits | 1.5 | L-T-P | 0-0-3 | Prerequisites | - |
| Continuous Internal Evaluation | 15 | Semester End Evaluation | 35 | Total Marks | 50 |

Course outcomes: At the end of the course, the student will be able to

| CO's | Statement | Skill | BTL | Experiments |
|------------|------------------------------------------------------------------------------------------------|----------|-----|-----------------------------------|
| CO1 | Analyze the calorific values among different types of solid, liquid, and gaseous fuels. | Analyze | L3 | E ₁ To E ₂ |
| CO2 | Analyze the components of Disassembly and assembly of the engine. | Analyze | L3 | E ₃ |
| CO3 | Estimate the residue percentage of a given fuel. | Estimate | L4 | E ₄ |
| CO4 | Evaluate the performance of the reciprocating air compressor. | Evaluate | L5 | E ₅ |
| CO5 | Evaluate the performance of different types of petrol engines and diesel engines. | Evaluate | L5 | E ₆ To E ₁₂ |

Course outcomes towards achievement of programme outcomes & Strength of correlations (High :3, Medium :2, Low :1)

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 2 | | 2 | | | | | | | | | 3 | 3 |
| CO2 | 3 | 2 | | 2 | | | | | | | | | 3 | 3 |
| CO3 | 3 | 2 | | 2 | | | | | | | | | 3 | 3 |
| CO4 | 3 | 2 | | 2 | | | | | | | | | 3 | 3 |
| CO5 | 3 | 2 | | 2 | | | | | | | | | 3 | 3 |

| Expt. | contents | Mapped CO |
|-------|--------------------------------------------------------|-------------|
| E1 | Junker's gas calorimeter. | CO 1 |
| E2 | Bomb calorimeter | |
| E3 | Assembly and disassembly of diesel and petrol engines | CO 2 |
| E4 | Canradson's carbon residue tester. | CO 3 |
| E5 | Performance of two stage reciprocating air compressor. | CO4 |
| E6 | Valve timing diagram of 4-stroke diesel engine | CO5 |
| E7 | Port timing diagram of 2-stroke petrol engine. | |
| E8 | Performance of 4-stroke single cylinder diesel engine. | |
| E9 | I.C. Engines Air/Fuel Ratio and Volumetric Efficiency. | |
| E10 | I.C. Engines Heat Balance | |
| E11 | Morse test on multi cylinder petrol engine | |
| E12 | Retardation test | |