## APPLIED THERMODYNAMICS LAB

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| **Course Code** | 1 9ME3451 | **Year** | II | **Semester** | I |
| **Course Category** | Program Core | **Branch** | ME | **Course Type** | Practical |
| **Credits** | 1.5 | **L – T – P** | 0 – 0 – 3 | **Prerequisites** | Engineering Thermodynamics, Applied Thermodynamics |
| **Continuous Internal Evaluation** | 25 | **Semester End Evaluation** | 50 | **Total Marks** | 75 |

| **Course Outcomes** | | **Levels** |
|---|---|---|
| After successful completion of the course, the student will be able to | | |
| **CO1** | Test the performance of different types of petrol engine and diesel engine. | L1 |
| **CO2** | Disassembly and assembly of engine. | L2 |
| **CO3** | Assess the performance of reciprocating air compressor. | L3 |
| **CO4** | Calculate calorific values among different types of solid, liquid and gaseous fuels. | L4 |
| **CO5** | Estimate the residue percentage of given fuel and properties of Refrigeration & Air Conditioning. | L3 |

| **Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3-High, 2: Medium, 1: Low)** | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **CO1** | 3 | 3 | | 3 | | | | | | | | | 3 | 2 |
| **CO2** | 3 | 3 | | 3 | | | | | | | | | 3 | 2 |
| **CO3** | 3 | 3 | | 3 | | | | | | | | | 3 | 2 |
| **CO4** | 3 | 3 | | 3 | | | | | | | | | 3 | 2 |
| **CO5** | 3 | 3 | | 3 | | | | | | | | | 3 | 2 |

| **Syllabus** | | |
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| **Expt.No** | **Contents** | **Mapped CO** |
| 1. | Valve timing diagram of 4-stroke diesel engine | CO1 |
| 2. | Port timing diagram of 2-stroke petrol engine. | |
| 3. | Performance of 4-stroke single cylinder diesel engine. | |
| 4. | I.C. Engines Air/Fuel Ratio and Volumetric Efficiency. | |
| 5. | I.C. Engines Heat Balance. | |
| 6. | Morse test on multi cylinder petrol engine. | |
| 7. | Retardation test | |
| 8. | Assembly and disassembly of diesel and petrol engines | CO2 |
| 9. | Performance of two stage reciprocating air compressor | CO3 |
| 10. | Junker's gas calorimeter. | CO4 |
| 11. | Bomb calorimeter. | |
| 12. | Canradson's carbon residue tester. | CO5 |
| 13. | Performance of Refrigeration Test Rig. | |
| 14. | Study the properties of Air Conditioning Tutor. | |