



Techno College of Engineering Agartala

An Engineering College Approved by AICTE, MHRD, Govt. of India

Affiliated to Tripura University (A Central University),

Department of Mechanical Engineering



List of Laboratory Experiments

Automobile Lab		
Branch: ME		Prerequisites: Automobile Engineering
Course overview: The Automobile Engineering Laboratory is designed to provide students with practical exposure to the construction, operation, testing, and maintenance of key automotive components and systems. Through hands-on experiments and demonstrations, students develop a comprehensive understanding of internal combustion engines, braking systems, transmission systems, suspension systems, steering mechanisms, and fuel supply systems. The course aims to bridge the gap between theoretical automobile engineering concepts and real-world vehicle technologies. It also enhances students' diagnostic, troubleshooting, and component assembly/disassembly skills, which are essential in the automotive industry and related fields.		
Course objectives: I. To study the construction and working principles of various automobile systems and components. II. To provide hands-on training in dismantling, assembling, and testing automotive subsystems. III. To familiarize students with fuel supply, ignition, transmission, steering, braking, and suspension systems. IV. To analyze performance parameters of I.C. engines using test rigs. V. To develop technical report writing and interpretation skills related to automobile diagnostics.		
Course outcomes:		
CO Number	CO Description	K-level
CO-1	Understand and identify components of automobile systems.	K-2
CO-2	Perform basic disassembly and reassembly of engines and subsystems.	K-3
CO-3	Evaluate engine performance using experimental data.	K-4
CO-4	Demonstrate diagnostic skills in identifying faults in automotive systems.	K-4
Sl. No.	EXPERIMENT NAME	CO
1.	Study and Dismantling of a Four-Stroke Petrol/Diesel Engine	CO-1
2.	Valve Timing Diagram of a Four-Stroke Engine	CO-1
3.	Performance Test on a Single-Cylinder Diesel Engine Test Rig	CO-1



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4.	Study and Demonstration of Fuel Injection System (Petrol and Diesel)	CO-2
5.	Study of Carburetor and Fuel Supply System	CO-2
6.	Study of Ignition Systems (Battery and Magneto)	CO-3
7.	Study of Clutch, Gearbox, Differential and Transmission System	CO-3
8.	Study and Testing of Braking System (Hydraulic, Mechanical, ABS)	CO-3
9.	Study of Steering Geometry and Alignment (including Ackermann Mechanism)	CO-4
10.	Study of Suspension Systems (Leaf Spring, Coil Spring, etc.)	CO-4