

**COURSE TITLE : AUTOMOBILE ENGINEERING LAB**  
**COURSE CODE : 5059**  
**COURSE CATEGORY : A**  
**PERIODS/WEEK : 4**  
**PERIODS/SEMESTER : 60**  
**CREDITS : 2**

**TIME SCHEDULE**

Module	Topic	Periods
1	Study of Viscometer and flash and fire point experiments	15
2	Study and experiments of calorific value determination	15
3	Testing of various types of engines	15
4	Air compressor efficiency test.	15
<b>TOTAL</b>		<b>60</b>

**GENERAL COURSE OUTCOME**

Sl.No.	sub	Student will be able
<b>1</b>	1	Understand the working of different calorimeters
	2	Conduct various performance tests on petrol and diesel engines
	3	Understand viscosity, calorific value, flash point, fire point of fuels and lubricating oils
	4	Conduct Morse test on petrol engine
	5	Understand the working of air compressor

**SPECIFIC COURSE OUTCOME**

**MODULE I**

- 1.1.0 Understand the working of viscometer
- 1.1.1 Compute the viscosity and viscosity index of a given lubricating oil
- 1.1.2 Understand the working of flash point apparatus
- 1.1.3 Compute the flash point of a given fuel

**MODULE II**

- 2.1.0 Understand the working of different calorimeters
- 2.1.1 Calculate the calorific value of a solid, liquid and gaseous fuels

### **MODULE III**

- 3.1.0 Determine the fuel consumption, of a petrol engine at various levels
- 3.1.1 Determine the fuel consumption of a diesel engine at various levels
- 3.1.2 Conduct Performance tests of the petrol engine – load test, heat balance test, Morse test, Compute the values of Engine performance and draw various characteristic curves.
- 3.1.3 Conduct Performance tests of the diesel engine – load test, heat balance test.
- 3.1.4 Compute the values of engine performance and draw various characteristic curves.

### **MODULE IV**

- 4.1.0 Conduct various tests on air compressor efficiencies
- 4.1.1 Draw performance characteristic curves of compressor

## **CONTENT DETAILS**

### **MODULE-I**

- 1. Study the working of viscometer
- 2. Determine the viscosity and viscosity index of a given lubricating oil
- 3. Study the working of flash point apparatus

### **MODULE-II**

- 1. Determine the flash point of a given fuel
- 2. Study the working of different calorimeter meters
- 3. Determine the calorific value of solid, liquid and gaseous fuels

### **MODULE-III**

- 1. Determine the fuel consumption, of a petrol engine at various levels
- 2. Determine the fuel consumption of a diesel engine at various levels
- 3. Determine the heat balance account of an I.C. engine

### **MODULE-IV**

- 1. Conduct Morse test
- 2. Tests on air compressor – efficiency, performance characteristic curves

### **REFERENCE:**

M L Mathur & R P Sharma - Internal combustion Engines – Dhanpat Rai