

LESSON PLAN

NAME OF FACULTY MR. SUMIT KUMAR
DISCIPLINE : MECHANICAL ENGG.
SEMESTER : 4TH
SUBJECT : THERMODYNAMICS-II

LESSON PLAN DURATION : 15 WEEK

WORK LOAD (LECTURE/ PRACTICAL) : 03 LECTURES/WEEK , PRACTICALS -02 HOURS/WEEK

WEEK	THEORY		PRACTICAL			
	LECTURE DAY	TOPIC	DATE	PRACTICAL No.	TOPIC	DATE
1 st	1 st	UNIT I : CHAPTER 1- IC Engines-Introduction and classification of IC engine		1 st	Dismantle an IC engine and note down the condition of various parts , removal and fitting of piston , ring , mesuring of bore size , crank shaft	
	2 nd	Description of Otto Cycle, Diesel Cycle with PV and TS diagram				
	3 rd	Working principle of two stroke and four stroke cycle, SI engines and CI engines				
2 nd	4 th	Location and functions of various parts of IC engines and materials used		2 nd	Dismantle and Assembling of a carburetor	
	5 th	Basic terms such as bore, TDC, BDC,stroke, crank throw, piston speed and compression ratio, valve timing diagram for four stroke CI and SI engines				
	6 th	Comparison between SI and CI engines, comparison between two stroke and four stroke engines				
3 rd	7 th	CHAPTER 2-Fuel Supply & Ignition system in Petrol Engine: Concept of carburetion		3 rd	Servicing of petrol engine	
	8 th	Air fuel ratio, mixture required at different conditions and loads on engine				
	9 th	Simple carburetor and its limitations and application				
4 th	10 th	Working of Solex carburettor		4 TH	Demonstration of electronic ignition system	
	11 th	Description of Petrol Injection System				
	12 th	Description of battery coil And electronic ignition system				
5 th	13 th	UNIT II : CHAPTER 3-Fuel System of Diesel Engine		5 th	Valve servicing, grinding , lapping and fitting mechanism and tappet adjustment	
	14 th	Components of fuel supply system of diesel engine				
	15 th	Description and working of fuel feed pump				
6 th	16 th	Fuel injection pump		6 th	Service of water cooling system of IC engine and note down the functioning of various components	
	17 th	Fuel injectors and fuel filters				
	18 th	Types of fuel injection system				
7 th	19 th	CHAPTER 4-Cooling and Lubrication : Function of cooling system in IC engine		7 th	Revision of previous practicals	
	20 th	Air cooling and water cooling system				
	21 th	Use of thermostat and radiator				

8 th	22th	Function of lubrication		8th	Determination of BHP by dynamometer	
	23th	Lubrication system of IC engine				
	24th	UNIT III : CHAPTER 5-Testing of IC Engines -Engine power - indicated and brake power				
9 th	25th	Efficiency - mechanical, thermal. relative and volumetric		9th	Revision of previous practicals	
	26th	Methods of finding indicated and brake power				
	27th	Morse test for petrol engine				
10 th	28th	Heat balance sheet		10 th	Morse test on multi-cylinder petrol engine	
	29th	Simple numerical problems				
	30th	Concept of pollutants in SI and CI engines				
11 th	31th	Pollution control, norms for two or four wheelers		11 th	Testing of engine pollution	
	32th	Bharat stage emission standards (BS norms)				
	33th	Methods of reducing pollution in ic engines				
12 th	34th	UNIT IV :CHAPTER 6 - Steam Turbine and Steam Condensers- Introduction Main parts, uses and classification of steam turbine		12 th	Local visit to roadways or private automobile workshops.	
	35th	Construction and working principle of impulse and reaction steam turbines				
	36th	Comparison between impulse and reaction steam turbines, governing of steam turbine				
13 th	37th	Steam nozzles-types and applications, Functions of a steam condenser		13 th	Revision of practicals	
	38th	Elements of condensing plants, types of steam condenser(surface and jet)				
	39th	Comparison between jet and steam condensers, cooling pond and cooling towers				
14 th	40th	UNIT V : CHAPTER 7-Gas turbine and jet propulsion - classification of gas turbines		14 th	Revision of practicals	
	41th	Open&close cycle gas turbine,comparison of gas turbine with reciprocating IC engine				
	42th	Application & limitations of gas turbine, open cycle constant pressure gas turbines				
15th	43th	Closed cycle gas turbine, PV and TS diagram and working		15th	Viva voce	
	44th	Principle of operation of RAM jet & TURBO jet engine , application of Jet engine				
	45th	Supercharger and turbocharger engine				