LESSON PLAN

NAME OF FACULTY: SH. HITESH AGGARWAL
DISCIPLINE: MECHANICAL ENGINEERING
SEMESTER: IV
SUBJECT: THERMODYNAMICS-II
LESSON PLAN DURATION: 15 WEEKS
WORK LOAD (LECTURE/PRACTICAL) PER WEEK: THEORY-3 & PRACTICAL-6

WEEK	THEORY		PRACTICAS
	LECTURE NO.	TOPIC	TOPIC
1st	1	**1. IC Engines** (09 hrs) 1.1 Introduction 1.2 Working principle of two stroke and four stroke cycle	1. Study of a two stroke engine using cut section model, note the function and material of each part.
	2	SI engines and CI engines,	
	3	Otto cycle,	
2nd	4	diesel cycle	2. Study of a four stroke engine using cut section model. Note the function of each part.
	5	and dual cycle	
	6	1.3 Location and functions of various parts of IC engines and materials used for them	
3rd	7	1.4 Concept of IC engine terms: bore, stroke, dead centre, crank throw,	Copy Checking/revision
	8	compression ratio, piston displacement, piston speed	
	9	**2. Fuel Supply in Petrol Engine** (08 hrs) 2.1 Concept of carburetion	
4th	10	2.2 Air fuel ratio	3. Study of battery ignition system of a multi-cylinder petrol engine stressing ignition timings, setting, fixing order and contact breaker; gap adjustment.
	11	2.3 Simple carburetor and its application	
	12	MPFI,	
5th	13	Common rail system,	4. Study of cooling of IC engine.
	14	super charging and turbo charger	
	15	Problem solving	
6th	16	**SESSIONAL TEST-I**	Copy Checking/revision
	17	**3. Fuel System of Diesel Engine** (06 hrs) 3.1 Components of fuel system	
	18	3.2 Description and working of fuel feed pump	

7th	**19**	3.2 Description and working of fuel feed pump	5. Study of lubricating
	20	3.3 Fuel injection pump	system of IC engine.
	21	3.4 Injectors	
8th	**22**	**4. Ignition System of IC Engines** (06 hrs) 4.1 Description of battery coil and magnet ignition system	6. Determination of BHP by dynamometer.
	23	4.1 Description of battery coil and magnet ignition system	
	24	4.2 Electronic ignition system	
9th	**25**	4.3 Fault finding in ignition system and remedial action	Copy Checking/revision
	26	**SESSIONAL TEST-II**	
	27	**5. Cooling and Lubrication** (10 hrs) 5.1 Function of cooling system in IC engine	
10th	**28**	5.2 Air cooling and water cooling system, use of thermostat, radiator and forced circulation in water cooling (description with line diagram)	7. Morse test on multi-cylinder petrol engine.
	29	5.2 Air cooling and water cooling system, use of thermostat, radiator and forced circulation in water cooling (description with line diagram)	
	30	5.2 Air cooling and water cooling system, use of thermostat, radiator and forced circulation in water cooling (description with line diagram)	
11th	**31**	5.3 Function of lubrication	8. Local visit to roadways or private automobile workshops.
	32	5.4 Types and properties of lubricant	
	33	5.5 Lubrication system of engine	
12th	**34**	5.6 Fault finding in cooling and lubrication and remedial action	Copy Checking/revision
	35	5.6 Fault finding in cooling and lubrication and remedial action	
	36	**6. Testing of IC Engines** (09 hrs) 6.1 Engine power - indicated and brake power	
13th	**37**	6.2 Efficiency - mechanical, thermal. relative and volumetric	Viva-Voice
	38	6.3 Methods of finding indicated and brake power	
	39	6.4 Morse test for petro1 engine	
14th	**40**	6.5 Heat balance sheet	Viva-Voice
	41	6.6 Concept of pollutants in SI and CI engines, pollution control, norms for twoor four wheelers – BIS – I, II, III and IV methods of reducing pollution in IC engines,	
	42	6.6 Concept of pollutants in SI and CI engines, pollution control, norms for twoor four wheelers – BIS – I, II, III and IV methods of reducing pollution in IC engines,	
15th	**43**	alternative fuels like CNG and LPG	Compilation
	44	Viva-voice	
	45	**SESSIONAL TEST-III**	