

## LESSON PLAN

**Name of the Faculty :** Arvind Bhart

**Discipline** Mechanical engineering

**Semester** 4th

**Subject** ICE

**Lesson Plan duration :** 15 weeks (from January , 2018 to April , 2018)

Work load (Lecture/ Practical) per week (in hours) : Lecture -03 practical-02

WEEK	THEORY		PRACTICAL	
	Lecture day	Topic (including assignment and test)	Practical Day	Topic
1	1	<b>IC Engines</b>	1	Study of a two stroke engine using cut section model, note the function and material of each part.
	2	1.1 Introduction	2	Study of a four stroke engine using cut section model. Note the function of each part
	3	1.2 Working principle of two stroke and four stroke cycle, SI engines and CI	3	Study of battery ignition system of a multi-cylinder petrol engine stressing ignition timings, setting, fixing order and contact breaker; gap adjustment
2	4	Otto cycle, diesel cycle and dual cycle	4	Study of cooling of IC engine.
	5	1.3 Location and functions of various parts of IC engines and materials used for them	5	Study of lubricating system of IC engine.
	6		6	Determination of BHP by dynamometer.
3	7	1.4 Concept of IC engine terms: bore, stroke, dead centre, crank throw,	7	Morse test on multi-cylinder petrol engine.
	8	compression ratio, piston displacement, piston speed	8	Local visit to roadways or private automobile workshops
4	9	<b>Fuel Supply in Petrol Engine</b>		
	10	2.1 Concept of carburetion		
	11	2.2 Air fuel ratio		
5	12	2.3 Simple carburetor and its application, MPFI, Common rail system		
	13	super charging and turbo charger		
6	14	<b>Fuel System of Diesel Engine</b>		
	15	3.1 Components of fuel system		
	16	3.2 Description and working of fuel feed pump		
7	17	3.3 Fuel injection pump		
	18	3.4 Injectors		
8	19	<b>Ignition System of IC Engines</b>		
	20	4.1 Description of battery coil and magnet ignition systems		
9	21	4.2 Electronic ignition system		
	22	4.3 Fault finding in ignition system and remedial action		
	23	<b>Cooling and Lubrication</b>		
10	24	5.1 Function of cooling system in IC engine		
	25	5.2 Air cooling and water cooling system, use of thermostat, radiator and forced circulation in water cooling (description with line diagram		
11	26			

9	27	5.3 Function of lubrication		
10	28	5.4 Types and properties of lubricant		
	29	5.5 Lubrication system of engine		
	30	5.6 Fault finding in cooling and lubrication and remedial action		
11	31	<b>Testing of IC Engines</b>		
	32	6.1 Engine power - indicated and brake power		
	33	6.2 Efficiency - mechanical, thermal, relative and volumetric		
12	34	methods of reducing pollution in IC engines, alternative fuels like CNG and LPG		
	35	6.3 Methods of finding indicated and brake power		
	36	6.4 Morse test for petrol engine		
13	37	6.5 Heat balance sheet		
	38	6.6 Concept of pollutants in SI and CI engines, pollution control, norms for two or four wheelers – BIS – I, II, III and IV		
	39	Revision		
14	40	Revision		
	41	Revision		
15	42	Revision		
	43	Revision		
	44	Revision		