Govt. Polytechnic Hamirpur (H.P.)
Lecture Planning (Theory)

Branch : **Mechanical Engineering** Semester : **5th**

Subject : **Thermal Engineering-II** Session : **September –December,2021**

Teacher : **Manoj Kumar**

Sr. No.	No. of Lectures	Chapter/ Unit Description	Detail of Contents	Remarks
1.	7	**Power Cycles**	Concept of reversibility, Carnot cycle .Rankine cycle and its efficiency . Brayton cycle . Otto, Diesel and Dual Combustion cycle	
2.	7	**Principles of I.C. Engines**	Introduction and classification of I.C. Engines .Working principle of two strokes and four strokes cycle by representing on PV and valve timing diagrams . Petrol and diesel engines, their comparison and applications . Location and functions of various parts of I.C. engines and materials used for them . Concept of IC engine terms: Bore, stroke, dead centres, crank throw, compression ratio, clearance volume, piston displacement and piston speed. Familiarity with ISI specification for I.C. engine parts	Class test -1 will be In 3rd week of October, 2021
3.	5	**Carburation and Ignition Systems of Petrol Engine**	Concept of carburetion .Air fuel ratio . Simple carburettor and its limitations . Description of a battery coil and magneto ignitions system	
4.	5	**Fuel System in Diesel Engines**	Components of Fuel system . Description and working of fuel feed pump .Fuel injection pump . Injector . Multi Point Fuel Injection Systems	Class test -2 will be In 4th week of November, 2021
5.	6	**Cooling and Lubrication**	Necessity of Engine Cooling . Cooling systems: their main features . Thermostat .Defects in cooling system and their rectification . Function of lubrication .Types and properties of Engine lubricants . Lubrication systems of I.C. engine . ISI specification and brand names of Engine lubricants . Fault in cooling and lubrication system and their remedial actions	
6.	10	**I.C. Engine Testing**	Engine power - indicated and Brake power . Efficiency - Mechanical, Thermal, Relative and volumetric .Methods of finding indicated and brake power . Morse Test .Heat balance sheet	House test will be In 2nd week of December, 2021
7.	6	**Air Compressors**	Industrial uses of compressed air . Classification - description of reciprocating and Rotary air compressors Fans, Blowers and supercharger 34 . Working principle of reciprocating single and two stage compressors. Intercooling, volumetric efficiency .Operation and Maintenance of reciprocating compressors	

Teaching Resources:-

R1. Thermal Engineering-II by G.S. Aulakh
R2. Thermal Engineering by PK Nag
R3. Thermal Engineering by A.S. Sarao, SatyaPrakashan

14/09/2021

Signature of Teacher

Signature of H.O.D.