		LESSON PLAN-4th SEMESTER		
Subject- **THERMAL ENGINEERING-II (TH-4)**				
Name of the Faculty- Sibashakti Majhi		**(16/01/2024 – 26/04/2024)**		
MONTH	CHAPTER/UNIT	COURSE TO BE COVERED	CLASSES REQUIRED	REMARKS (IF ANY)
	Chapter-1	**Performance of I.C engine**	**08**	
	1.1	Define mechanical efficiency, Indicated thermal efficiency, Relative Efficiency, brake thermal efficiency	2	
	1.1	Overall efficiency ,Mean effective pressure &specific fuel consumption.	2	
	1.2	Define air-fuel ratio & calorific value of fuel.	1	
	1.3	Work out problems to determine efficiencies & specific fuel consumption.	3	
	Chapter-2	**Air Compressor**	**12**	
	2.1	Explain functions of compressor & industrial use of compressor air	1	
	2.2	Classify air compressor & principle of operation.	1	
	2.3	Describe the parts and working principle of reciprocating Air compressor	2	
	2.4	Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio free air delivered &Volumetric efficiency.	2	
	2.5	Derive the work done of single stage & two stage compressor with and without clearance.	3	
	2.6	Solve simple problems (without clearance only)	3	
	Chapter-3	**Properties of Steam**	**12**	
	3.1	Difference between gas & vapours.	1	
	3.2	Formation of steam.	1	
	3.3	Representation on P-V, T-S, H-S, & T-H diagram.	1	
	3.4	Definition & Properties of Steam.	1	
	3.5	Use of steam table & mollier chart for finding unknown properties.	2	
	3.6.	Non flow & flow process of vapour	2	
	3.7.	P-V, T-S & H-S, diagram	1	
	3.8	Determine the changes in properties & solve simple numerical	3	
	Chapter-4	**Steam Generator**	**12**	
	4.1	Classification & types of Boiler.	1	
	4.2	Important terms for Boiler.	1	
	4.3.	Comparison between fire tube & Water	2	

		tube Boiler		
	4.4	Description & working of common boilers (Cochran, Lancashire, Babcock & Wilcox Boiler)	4	
	4.5	Boiler Draught (Forced, induced & balanced)	2	
	4.6	Boiler mountings & accessories	2	
Chapter-5		**Steam Power Cycles**	**08**	
	5.1, 5.2	Carnot cycle with vapour. Derive work & efficiency of the cycle.	1	
	5.3, 5.3.1	Rankine cycle. Representation in P-V, T-S & h-s diagram.	1	
	5.3.2	Derive Work & Efficiency.	1	
	5.3.3	Effect of Various end conditions in Rankine cycle.	1	
	5.3.4.	Reheat cycle & regenerative Cycle	2	
	5.4	Solve simple numerical on Carnot vapour Cycle & Rankine Cycle.	2	
Chapter-6		**Heat Transfer**	**08**	
	6.1	Modes of Heat Transfer (Conduction, Convection, Radiation).	2	
	6.2	Fourier law of heat conduction and thermal conductivity (k).	1	
	6.3	Newton's laws of cooling.	1	
	6.4	Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) only statement, no derivation & no numerical problem.	2	
	6.5	Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility	2	