Name of the Institute:	**C. V. Raman Polytechnic**
Department:	**Mechanical Engineering**
Semester/Division/Branch:	**4th Sem**
Subject Name with code:	**Thermal Engineering-II (Th-4)**
Total No. of Class (Required):	**60**
Faculty Name:	**Dr. Shubhashree Mohapatra**

Class No.	Brief Description of the Topic/Chapter to be taught	Remarks
1	Define mechanical efficiency, Indicated thermal efficiency,	
2	Relative Efficiency, brake thermal efficiency overall efficiency	
3	Mean effective pressure & specific fuel consumption.	
4	Define air-fuel ratio & calorific value of fuel.	
5	Work out problems to determine efficiencies & specific fuel consumption.	
6	Work out problems to determine efficiencies & specific fuel consumption.	
7	Explain functions of compressor & industrial use of compressor air	
8	Classify air compressor & principle of operation.	
9	Describe the parts and working principle of reciprocating Air compressor.	
10	Describe the parts and working principle of reciprocating Air compressor.	
11	Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio free air delivered &Volumetric efficiency	
12	Derive the work done of single stage compressor with clearance	
13	Derive the work done of single stage compressor without clearance	
14	Derive the work done of two stage compressor with and without clearance	
15	Solve simple problems (without clearance only)	
16	Solve simple problems (without clearance only)	
17	**Revision and doubt clearing**	
18	**Revision and doubt clearing**	
19	Difference between gas & vapors.	

20	Formation of steam.	
21	Representation on P-V, T-S, H-S, & T-H diagram.	
22	Definition & Properties of Steam.	
23	Use of steam table & mollier chart for finding unknown properties.	
24	Non flow & flow process of vapor.	
25	Non flow & flow process of vapor.	
26	Determine the changes in properties & solve simple numerical.	
27	Classification & types of Boilers.	
28	Important terms for Boiler.	
29	Comparison between fire tube & Water tube Boiler.	
30	Description & working of common boilers (Cochran)	
31	Description & working of common boilers (Lancashire, Babcock & Wilcox Boiler)	
32	Description & working of common boilers (Babcock & Wilcox Boiler)	
33	Boiler Draught (Forced, induced & balanced)	
34	Boiler mountings	
35	Boiler accessories.	
36	Carnot cycle with vapor.	
37	Derive work & efficiency of the cycle.	
38	Rankine cycle. Derive Work & Efficiency.	
39	Rankine cycle numerical	
40	Rankine cycle numerical	
41	Effect of Various end conditions in Rankine cycle.	
42	Reheat cycle & regenerative Cycle.	
43	Solve simple numerical on Carnot vapor Cycle & Rankine Cycle.	
44	Solve simple numerical on Carnot vapor Cycle & Rankine Cycle.	
45	**Revision and doubt clearing**	
46	**Revision and doubt clearing**	
47	**Revision and doubt clearing**	
48	Solve simple numerical on Carnot vapor Cycle & Rankine Cycle.	
49	Modes of Heat Transfer (Conduction, Convection,)	
50	Modes of Heat Transfer (Radiation).	
51	Fourier law of heat conduction and thermal conductivity (k).	

52	Newton's laws of cooling.	
53	Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) only statement, no derivation & no numerical problem.	
54	Black body Radiation	
55	Numericals	
56	Definition of Emissivity, absorptivity, & transmissibility.	
57	Definition of Emissivity, absorptivity, & transmissibility.	
58	Revision and Doubt Clearing	
59	Revision and Doubt Clearing	
60	Revision and Doubt Clearing.	

Faculty

HOD