Lesson Plan

Name of the Institute:	**C. V. Raman Polytechnic**
Department:	**Mechanical Engineering**
Semester/Division/Branch:	**5th Sem/ME**
Subject Name with code:	**Refrigeration and Air Conditioning (Th-5)**
Total No. of Class (Required):	**60**
Faculty Name:	**Dr.Shubhashree Mohapatra**

Class No.	*Brief description of the Topic/Chapter to be taught*	Remarks
1	Definition of refrigeration and unit of refrigeration	
2	Definition of COP, Refrigerating effect (R.E)	
3	Principle of working of open and closed air system of refrigeration	
4	Calculation of COP of Bell-Coleman cycle	
5	Numerical on above	
6	Simple Vapor Compression Refrigeration System	
7	Types: Cycle with dry saturated vapors after compression	
8	Cycle with wet vapors after compression	
9	Cycle with superheated vapors after compression	
10	Cycle with superheated vapors before compression, Cycle with sub cooling of refrigerant	
11	Numerical on above	
12	Numerical on above (determination of COP, mass flow)	
13	Simple vapor absorption refrigeration system	
14	Practical vapor absorption refrigeration system	
15	COP of an ideal vapor absorption refrigeration system	
16	Numerical on above	
17	Numerical on above	
18	Refrigeration Equipments Refrigerant Compressors	
19	Principle of working and constructional details of reciprocating compressors	
20	Principle of working and constructional details of rotary compressors	
21	Principle of working and constructional details of Centrifugal compressor	
22	Hermetically and semi-hermitically sealed compressor	
23	Condensers Principle of working and constructional details of air cooled and water-cooled condenser	
24	Heat rejection ratio, Cooling tower and spray pond	
25	Evaporators, Principle of working and constructional details of evaporator	
26	Types of evaporators, Bare tube coil evaporator, finned evaporator	
27	shell and tube evaporator	

28	shell and tube evaporator	
29	Expansion Valves, Capillary tube	
30	Automatic expansion Valve	
31	Thermostatic expansion valve	
32	Refrigerants Classification and desirable properties of an ideal refrigerant	
33	Designation of refrigerant, Thermodynamic properties of Refrigerants	
34	Chemical properties of refrigerants	
35	Commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717	
36	Substitute for CFC, Applications of Refrigeration	
37	Cold storage	
38	Daily refrigeration	
39	Ice Plant	
40	Water cooler	
41	Frost free refrigerator	
42	Psychometrics & Comfort Air Conditioning Systems	
43	Psychometric terms Revision and Doubt Clearing	
44	Adiabatic saturation of air by evaporation of water, Psychometric charts & uses, Psychometric processes	
45	Sensible heating and Cooling	
46	Cooling and Dehumidification,	
47	Heating and Humidification	
48	Adiabatic cooling with humidification	
49	Total heating of a cooling process	
50	SHF, BPF	
51	Adiabatic mixing	
52	Numerical on above	
53	Numerical on above	
54	Effective temperature and Comfort chart	
55	Air Conditioning SystemsFactors affecting comfort air conditioning	
56	Equipment used in an air-conditioning	
57	Classification of air conditioning system	
58	Winter Air Conditioning system	
59	Summer Air Conditioning system	
60	Numerical on above	

Signature of the Faculty

Signature of the H.O.D