

Lesson Planning

Name of Faculty :Amit Kumar
Dicipline : Mechanical Engg.
Subject : Refrigeration and Air Conditioning
Lesson Plan duration : 16 weeks (30-07-2026 to 23-11-2026)
Work load (Lecture/Practical) per week (in hours): 3L/Week and 2P (1 Grp/Week)

Week	Theory		
	Lecture day	Topic(Including assignment/test)	
1		UNIT - 01 Fundamentals of Refrigeration	
	1	Introduction to refrigeration, and air conditioning	
	2	meaning of refrigerating effect,units of refrigeration, COP,	
	3	methods of refrigeration,Introduction to air refrigerator working on reversed carnot cycle.	
2	4	Assignment-I	
		UNIT-02 Vapour Compression System	
	5	Introduction, principle, function	
	6	parts and necessity of vapour compression system	
3	7	T- ϕ and p– H charts	
	8	dry, wet and superheated compression	
	9	Effect of sub cooling,super heating,	
4	10	mass flow rate,entropy, enthalpy, work done	
	11	Refrigerating effect and COP	
	12	actual vapour compression system	
	13	Sessional-I	
		UNIT-03 Refrigerants	
	14	Functions, classification of refrigerants	
	15	properties of R - 717, R – 22, R–134 (a) and CO ₂ .	
6	16	Properties of ideal refrigerant,selection of refrigerant	
	17	Assignment-II	
	18	Revision	
7		UNIT-04 Vapour Absorption System	
	19	Introduction, principle and working of simple absorption system	
	20	domestic electrolux refrigeration systems.	
	21	Solar power refrigeration system	

8	22	Advantages and disadvantages of solar power refrigeration system over vapour compression system.	
		UNIT-05 Refrigeration Equipment	
	23	Compressor - Function	
	24	various types of compressors	
9	25	Condenser - Function	
	26	various types of condensers	
	27	Evaporator - Function	
10	28	types of evaporators	
	29	Sessional-II	
	30	Expansion Valve - Function,	
11	31	various types such as capillary tube,	
	32	thermostatic expansion valve,	
	33	low side and high side float valves, application of various expansion valves	
12	34	Safety Devices-Thermostat, overload protector LP, HP cut out switch	
	35	Revision	
	36	PTM	
13		UNIT-06 Psychrometry	
	37	Definition, importance, specific humidity	
	38	relative humidity, degree of saturation	
	39	DBT, WBT, DPT, sensible heat,	
14	40	latent heat, Total enthalpy of air	
	41	Psychrometry chart and	
	42	various processes of psychrometry	
15	43	Assignment-III	
	44	Revision	
		UNIT-07 Air-Conditioner	
	45	Study of window air-conditioning	
16	46	split type air conditioning	
	47	Sessional-III	
	48	automobile air-conditioning	

PRACTICAL EXERCISES		
Week	Grp/ TURN	EXPERIMENT
1	1	1. 1. Identify various tools of refrigeration kit.
2	2	Revision of practical 1
3	3	2. Practice in cutting, bending, flaring, swaging and brazing of tubes.
4	4	Revision of practical 2
5	5	VIVA VOCE of EX.1 & 2
6	6	Sessional Test
7	7	3. Study of thermostatic switch, LP/HP cut out overload protector filters, strainers and filter driers.
8	8	Revision of practical 4 and VIVA VOCE
9	9	Sessional Test
10	10	4. Identify various parts of a refrigerator and window air conditioner.
11	11	5. To find COP of Refrigeration system.
12	12	6. To measure air flow using anemometer.
13	13	7. Charging of a refrigerator/ air conditioner.
14	14	8. To detect faults in a refrigerator/ air conditioner.
15	15	Sessional Test
16	16	9. Visit to an ice plant or cold storage plant. or central air conditioning plant.