

### Lesson Plan

Name of Faculty : Sonu  
 Discipline : Mechanical Engineering  
 Semester : V  
 Subject : Refrigeration and Air Conditioning(Theory and Practical)  
 Lesson Plan Duration : 15 Weeks

Week	Theory		Day	
	Lecture Day	Topic	Practical Day	Topic
I	1	Fundamentals of Refrigeration:Introduction to refrigeration, and air conditioning	1	Identify various tools of refrigeration kit and practice in cutting, bending, flaring, swaging and brazing of tubes.
	2	meaning of refrigerating effect		
	3	unit of refrigeration		
II	5	methods of refrigeration.	2	Practical copy check,solve problem query
	6	Introduction to air refrigerator working on reversed carnot cycle.		
	7	Vapour Compression System:Introduction		
	8	principle, function		
	9	parts and necessity of vapour compression system	3	Study of thermostatic switch, LP/HP cut out overload protector filters, strainers and filter drier
	10	T- $\phi$ and p- H charts		
	11	dry, wet and superheated compression		
	12	Effect of sub cooling		
IV	13	super heating	4	Practical copy check,solve problem query
	14	mass flow rate		
	15	entropy, enthalpy		
	16	work done,		
V	17	Refrigerating effect and COP	5	Identify various parts of a refrigerator and window air conditioner.
	18	actual vapour compression system		
	19	Refrigerants:Functions,		
	20	classification of refrigerants,		
VI	21	properties of R - 717	6	Practical copy check,solve problem query
	22	R – 22		
	23	R-134 (a) and CO <sub>2</sub>		
	24	Properties of ideal refrigerant, selection of refrigerant		
VII	25	Vapour Absorption System:Introduction	7	To find COP of Refrigeration system
	26	principle and working of simple absorption system		
	27	domestic electrolux refrigeration systems		
	28	Solar power refrigeration system		

VIII	29	advantages and disadvantages of solar power refrigeration system over vapour compression system	8	Practical copy check,solve problem query
	30	advantages and disadvantages of solar power refrigeration system over vapour compression system		
	31	Refrigeration Equipment:Compressor		
	32	Function,		
IX	33	various types of compressors	9	To detect trouble/faults in a refrigerator/window type air conditioner
	34	Condenser		
	35	Function, various types of condensers		
	36	Evaporator		
X	37	Function, types of evaporators	10	Practical copy check,solve problem query
	38	Expansion Valve		
	39	Function, various types such as capillary tube		
	40	thermostatic expansion valve		
XI	41	low side and high side float valves,	11	Charging of a refrigerator/window type air conditioner.
	42	application of various expansion valves		
	43	Safety Devices-Thermostat		
	44	overload protector LP, HP cut out switch.		
XII	45	Psychrometry:Definition, importance	12	Practical copy check,solve problem query
	46	specific humidity, relative humidity		
	47	degree of saturation, DBT		
	48	WBT, DPT		
XIII	49	sensible heat, latent heat,	13	Study of cut section of single cylinder compressor
	50	Total enthalpy of air		
	51	Psychrometry chart		
	52	various processes of psychrometry		
XIV	53	Air-Conditioner:Study of window air-conditioning	14	Visit to an ice plant, cold storage plant, central air conditioning plant
	54	Study of window air-conditioning		
	55	split type air conditioning		
	56	split type air conditioning		
XV	57	concept of central air- conditioning	15	Practical copy check,solve problem query
	58	concept of central air- conditioning		
	59	automobile air-conditioning		
	60	automobile air-conditioning		