

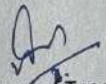
GOVT. POLYTECHNIC HAMIRPUR


LESSON PLAN FOR : ELEMENTS OF REFRIGERATION AND AIR-CONDITIONING

(SESSION: AUGUST-DEC. 2024)

MECHANICAL ENGINEERING (SEMESTER - 5th)

S.NO.	MONTH	WEEK	DATE	CONTENT (THEORY)	REMARKS
1	AUG	3rd	13,16,17	Unit-I: Definition of Refrigeration; Refrigerating effect-unit of refrigeration, Coefficient of performance; Carnot refrigeration cycle; Air refrigeration-Bell- Coleman cycle ,PV & TS diagram; Advantage and disadvantages in air refrigeration;(Simple problems on Carnot refrigeration cycle only)	
		4th	20,22,23,24		
		5th	27,29,30,31		
2	SEPT.	1st	3,5,6	Unit-II: Basic Components, Flow diagram of working of Vapour compression cycle; Representation of the vapour compression cycle on P-H & T-S Diagram; Expression for Refrigerating effect, work done and power required; Types of Vapour Compression cycle; Effects of superheating and sub cooling, its advantages and disadvantages; Simple Vapour absorptions cycle and its flow diagram; Comparison of Vapour absorption and vapour compression system.	
		2nd	10,12,13		
		3rd	17,19,20,21		
		4th	24,26,27,28		
3	OCT.	1st	1,3,4,5	Unit-III: Compressor - Hermetically sealed and Semi hermetically sealed compressor; Condensers - Air Cooled, water cooled, natural and forced draught cooling system; Advantages and disadvantages of air cooled and water cooled condensers; Evaporators- natural convection, forced convection types.	
		2nd	8,10		
		3rd	15,18,19		
		4th	22,23,25,26		
		5th	29		
4	NOV.	1st	1	Unit-IV: Capillary tube; Automatic Expansion valve; Thermo static expansion valve; High side and low side float valve; Solenoid valve; Evaporator pressure regulator. Slow and quick freezing; Cold storage and Frozen storage; Dairy refrigeration; Ice making industry; Water coolers.	
		2nd	5,7,8		
		3rd	12,14,16		
		4th	19,21,22,23		
		5th	26,28,29,30		
5	DEC.	1st		Unit-V: Introduction to Air conditioning; Factors affecting Air conditioning; Brief description of Dry Bulb Temperature, Wet bulb Temperature, Dew point temperature; Psychometric chart and its use; Psychometric process-sensible heating and cooling, Humidification and dehumidification; cooling and dehumidification, heating and humidification, .(Simple problems on above psychometric processes only by using psychometric chart); Equipment used in air conditioning cycle.	


Signature of Teacher


HOD (ME)