

Discipline: Mechanical	Semester: 4TH	Name of the Teaching faculty: GEETANJALI SETHI, Lecturer, Mechanical Engg.	Sr.
Subject: REFRIGERATION AND AIR CONDITIONING	No of Days/ Week class	Semester from Date: 22/12/2025 No of weeks: 15	To Date: 18 / 04/2026
Week	Class	Topics	
1st	1st	Introduction to Refrigeration: Definition of Refrigeration; Refrigerating effect	
	2nd	unit of refrigeration- Coefficient of performance;	
	3rd	Types of Refrigeration-Ice, dry ice, Steam jet,	
2nd	4th	Throttling, Liquid nitrogen refrigeration	
	5th	Carnot refrigeration Cycle;	
	6th	Air refrigeration- Bell - Coleman cycle	
3rd	7th	PV& TS diagram	
	8th	Advantage and disadvantages in air refrigeration;	
	9th	Simple problems	
4th	10th	Simple problems	
	11th	Refrigeration systems: Basic Components	
	12th	Flow diagram of working of Vapour compression cycle;	
5th	13th	Representation of the vapour compression cycle on P-H, T-S & P-V Diagram	
	14th	Expression for Refrigerating effect, work done and power required;	
	15th	Types of Vapour Compression cycle; Effects of super heating	
6th	16th	under cooling, its advantages and disadvantages;	
	17th	Simple Vapour absorptions cycle and its flow diagram	
	18th	Simple Electrolux system for domestic units	
7th	19th	Comparison of Vapour absorption and vapour compression system	
	20th	Simple problems on vapour compression cycle.	
	21th	Refrigeration equipment: Compressor - types of compressors	
8th	22th	Hermetically sealed	
	23th	Semi hermetically sealed compressor	
	24th	Condensers - Air Cooled, water cooled,	
9th	25th	natural and forced draught cooling system;	
	26th	Advantages and disadvantages of air cooled and water cooled condensers	
	27th	Evaporators -natural, convection	
10th	28th	forced convection types	
	29th	Refrigerant flow controls: Capillary tube;	
	30th	Automatic Expansion valve	
11th	31th	Thermo- static expansion valve	
	32th	High side and low side float valve	
	33th	Solenoid valve; Evaporator pressure regulator.	
12th	34th	Application of refrigeration: Slow and quick freezing	
	35th	Cold storage and Frozen storage; Dairy refrigeration	
	36th	Ice making industry; Water coolers.	
13th	37th	Air conditioning: Introduction to Air conditioning	
	38th	Factors affecting Air conditioning	
	39th	Psychometric chart and its use	

14th	40th	Psychometric process-sensible heating and cooling, Humidifying and dehumidifying; Adiabatic saturation process
	41th	Equipment used in air conditioning cycle; Air conditioning units and plants.
	42th	Refrigeration and Air-conditioning tools; Tools used in refrigeration and Air conditioner installation
15th	43th	Installation procedure
	44th	Faults in refrigeration and air conditioning system
	45th	Servicing procedure

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22.12.25  
Faculty Signature