

PNS SCHOOL OF ENGINEERING & TECHNOLOGY, MARSHAGHAI, KENDRAPARA
LESSON PLAN

Discipline : Mechanical	Semester: 5th	Name of the Teaching Faculty : Er. Jyotirmay Jena	
Subject : R & AC	No. of Days / per week class allotted : 4	Semester From date : 14.07.2025 to Date : 15.11.2025 Weeks : 15	No. of
Week	Class Day	Topics	
1st	1st	1.1 Definition of refrigeration and unit of refrigeration.	
	2nd	1.2 Definition of COP, Refrigerating effect (R.E)	
	3rd	1.3 Principle of working of open and closed air system of refrigeration.	
	4th	1.3.1 Calculation of COP of Bell-Coleman cycle and numerical on it.	
2nd	1st	simple problem on above	
	2nd	simple problem on above	
	3rd	2.1 schematic diagram of simple vapors compression refrigeration system	
	4th	2.2.1 Cycle with dry saturated vapors after compression.	
3rd	1st	2.2.2 Cycle with wet vapors after compression.	
	2nd	2.2.3 Cycle with superheated vapors after compression.	
	3rd	simple problem on above	
	4th	2.2.4 Cycle with superheated vapors before compression.	
4th	1st	2.2.5 Cycle with sub cooling of refrigerant	
	2nd	2.2.6 Representation of above cycle on temperature entropy and pressure enthalpy diagram	
	3rd	2.2.6 Representation of above cycle on temperature entropy and pressure enthalpy diagram	
	4th	simple problem on above	
5th	1st	simple problem on above	
	2nd	simple problem on above	
	3rd	3.1 Simple vapor absorption refrigeration system	
	4th	3.1 Simple vapor absorption refrigeration system	
6th	1st	3.2 Practical vapor absorption refrigeration system	
	2nd	3.2 Practical vapor absorption refrigeration system	
	3rd	3.3 COP of an ideal vapor absorption	
	4th	3.4. Numerical on COP.	
7th	1st	3.4. Numerical on COP.	
	2nd	4.1 REFRIGERANT COMPRESSORS	
	3rd	4.1.2 Centrifugal compressor only theory	
	4th	4.1.4 Hermetically and semi hermetically sealed compressor.	
8th	1st	4.2.1 Principle of working and constructional details of air cooled and water cooled condenser	
	2nd	4.2.2 Heat rejection ratio.	
	3rd	4.2.3 Cooling tower and spray pond.	
	4th	1.6.1 Principle of working and constructional details of an evaporator.	
9th	1st	simple problem on above	
	2nd	1.6.2 Types of evaporator. 1.6.3 Bare tube coil evaporator, finned evaporator, shell and tube evaporator.	
	3rd	5.1 EXPANSION VALVES 5.1.1 Capillary tube	

	4th	5.1.2 Automatic expansion valve 5.1.3 Thermostatic expansion valve
10th	1st	5.2.1 Classification of refrigerants
	2nd	simple problem on above
	3rd	5.2.3 Designation of refrigerant.
	4th	5.2.4 Thermodynamic Properties of Refrigerants.
11th	1st	5.2.6 commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717
	2nd	5.3 Applications of refrigeration
	3rd	5.3.1 cold storage
	4th	5.3.2 dairy refrigeration
12th	1st	5.3.3 ice plant
	2nd	5.3.4 water cooler
	3rd	6.1 Psychometric terms
	4th	6.2 Adiabatic saturation of air by evaporation of water
13th	1st	6.3 Psychometric chart and uses.
	2nd	6.4.1 Sensible heating and Cooling
	3rd	6.4.3 Heating and Humidification
	4th	6.4.5 Total heating of a cooling process
14th	1st	6.4.6 SHF, BPF,
	2nd	6.4.7 Adiabatic mixing
	3rd	6.5 Effective temperature and Comfort chart
	4th	7.1 Factors affecting comfort air conditioning. .
15th	1st	7.2 Equipment used in an air-conditioning.
	2nd	7.3 Classification of air-conditioning system
	3rd	7.4 Winter Air Conditioning System
	4th	7.5 Summer air-conditioning system.

Jyotirmay Jena
Signature of Lecturer
10/07/25

10.07.25
Signature of H.O.D

Signature of Principal
11/7/25