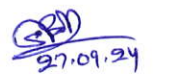


GOVT. POLYTECHNIC BOLANGIR
LESSON PLAN

Discipline : Mechanical	Semester:5th	Name of the Teaching Faculty : Manabhanjan Bhoi
Subject :R&AC	No. of Days / per week class allotted : 4	Semester From date : 01.07.2024 to Date :08.11.2024 No. of Weeeks : 18
Week	Class Day	Topics
Dt. 01.07.2024 to Dt.06.07.2024	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.
Dt. 08.07.2024 to Dt.13.07.2024	1st	2.1 schematic diagram of simple vapors compression refrigeration system
	2nd	2.2.1 Cycle with dry saturated vapors after compression.
	3rd	2.2.2 Cycle with wet vapors after compression.
	4th	2.2.3 Cycle with superheated vapors after compression.
Dt. 15.07.2024 to Dt.20.07.2024	1st	2.2.4 Cycle with superheated vapors before compression.
	2nd	2.2.5 Cycle with sub cooling of refrigerant
	3rd	2.2.6 Representation of above cycle on temperature entropy and pressure enthalpy diagram
	4th	2.2.6 Representation of above cycle on temperature entropy and pressure enthalpy diagram
Dt. 22.07.2024 to Dt.27.07.2024	1st	2.2.7 Numerical on above (determination of COP,mass flow)
	2nd	2.2.7 Numerical on above (determination of COP,mass flow)
	3rd	3.1 Simple vapor absorption refrigeration system
	4th	3.1 Simple vapor absorption refrigeration system
Dt. 29.07.2024 to Dt.03.08.2024	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.
Dt. 05.08.2024 to Dt.10.08.2024	1st	3.4.Numerical on COP.
	2nd	4.1 REFRIGERANT COMPRESSORS
		4.1.1 Principle of working and constructional details of reciprocating and rotary compressors.
		4.1.2 Centrifugal compressor only theory
3rd	4.1.3 Important terms.	
4th	4.1.4 Hermetically and semi hermetically sealed compressor.	
Dt. 12.08.2024 to Dt.17.08.2024	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.
Dt. 19.08.2024 to Dt.24.08.2024	1st	1.6.2 Types of evaporator.
		1.6.3 Bare tube coil evaporator, finned evaporator, shell and tube evaporator.
	2nd	5.1 EXPANSION VALVES
		5.1.1 Capillary tube
3rd	5.1.2 Automatic expansion valve	
	5.1.3 Thermostatic expansion valve	
4th	5.2.1 Classification of refrigerants	
	5.2.2 Desirable properties of an ideal refrigerant.	
Dt. 26.08.2024 to Dt.31.08.2024	1st	5.2.3 Designation of refrigerant.
	2nd	5.2.4 Thermodynamic Properties of Refrigerants.
		5.2.5 Chemical properties of refrigerants.
	3rd	5.2.6 commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717
4th	5.2.7 Substitute for CFC	
		5.3 Applications of refrigeration

Dt. 02.09.2024 to Dt.07.09.2024	1st	5.3.1 cold storage
	2nd	5.3.2 dairy refrigeration
	3rd	5.3.3 ice plant
	4th	5.3.4 water cooler 5.3.5 frost free refrigerator
Dt. 09.09.2024 to Dt.14.09.2024	1st	6.1 Psychometric terms
	2nd	6.2 Adiabatic saturation of air by evaporation of water
	3rd	6.3 Psychometric chart and uses.
	4th	6.4.1 Sensible heating and Cooling 6.4.2 Cooling and Dehumidification
Dt. 16.09.2024 to Dt.21.09.2024	1st	6.4.3 Heating and Humidification 6.4.4 Adiabatic cooling with humidification
	2nd	6.4.5 Total heating of a cooling process
	3rd	6.4.6 SHF, BPF
	4th	6.4.7 Adiabatic mixing
Dt. 23.09.2024 to Dt.28.09.2024	1st	6.4.8 Problems on above.
	2nd	6.4.8 Problems on above.
	3rd	6.5 Effective temperature and Comfort chart
	4th	7.1 Factors affecting comfort air conditioning. .
Dt. 30.09.2024 to Dt.05.10.2024	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	7.4 Winter Air Conditioning System
Dt. 14.10.2024 to Dt.19.10.2024	1st	7.5 Summer air-conditioning system.
	2nd	7.5 Summer air-conditioning system.
	3rd	Year round air conditioning system
	4th	Year round air conditioning system
Dt. 21.10.2024 to Dt.26.10.2024	1st	Numericals on Air condtioning system
	2nd	Numericals on Air condtioning system
	3rd	Numericals on Air condtioning system
	4th	Numericals on Air condtioning system
Dt. 28.10.2024 to Dt.02.11.2024	1st	Revision
	2nd	Revision
	3rd	Q & A Discaussion
	4th	Q & A Discaussion
Dt. 04.11.2024 to Dt.08.11.2024	1st	Doubt clearing
	2nd	Doubt clearing
	3rd	Q & A discaussion
	4th	Doubt clearing


 27/09/24
 Signature of
 Concerned Faculty


 27.09.24
 HOD(CIC)