

Discipline: Mechanical Engg.	Semester: 5 <sup>th</sup>	Faculty Name: Litu Behera
Subject: Refrigeration and air conditioning	No. of Days/per week class allotted:04	Semester: from 15.09.2022 to 22.12.2022 No. of weeks:15
week	Class day	Theory topics
1 <sup>st</sup>	1 <sup>st</sup>	AIR REFRIGERATION CYCLE. Definition of refrigeration and unit of refrigeration.
	2 <sup>nd</sup>	Definition of COP, Refrigerating effect (R.E )
	3 <sup>rd</sup>	Principle of working of open and closed air system of refrigeration.
	4 <sup>th</sup>	Bell-Coleman cycle or reversed brayton cycle and its C.O.P
2 <sup>nd</sup>	1 <sup>st</sup>	Problems on Bell-Coleman cycle
	2 <sup>nd</sup>	SIMPLE VAPOUR COMPRESSION REFRIGERATION SYSTEM schematic diagram of simple vapors compression refrigeration system
	3 <sup>rd</sup>	Cycle with dry saturated vapors after compression.
	4 <sup>th</sup>	Cycle with wet vapors after compression
3 <sup>rd</sup>	1 <sup>st</sup>	Cycle with superheated vapors after compression
	2 <sup>nd</sup>	Cycle with superheated vapors before compression
	3 <sup>rd</sup>	Cycle with sub cooling of refrigerant
	4 <sup>th</sup>	Representation of above cycle on temperature entropy and pressure enthalpy diagram
4 <sup>th</sup>	1 <sup>st</sup>	Numerical on above (determination of COP, mass flow)
	2 <sup>nd</sup>	VAPOUR ABSORPTION REFRIGERATION SYSTEM Simple vapor absorption refrigeration system
	3 <sup>rd</sup>	Practical vapor absorption refrigeration system
	4 <sup>th</sup>	COP of an ideal vapor absorption refrigeration system
5 <sup>th</sup>	1 <sup>st</sup>	Numerical on COP.
	2 <sup>nd</sup>	REFRIGERATION EQUIPMENTS

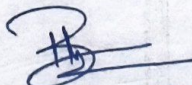
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14.9.2022

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14.9.22



		REFRIGERANT COMPRESSORS Principle of working and constructional details of reciprocating and rotary compressors.
	3 <sup>rd</sup>	Centrifugal compressor only theory
	4 <sup>th</sup>	Important terms.
6 <sup>th</sup>	1 <sup>st</sup>	Hermetically and semi hermetically sealed compressor
	2 <sup>nd</sup>	CONDENSERS Principle of working and constructional details of air cooled and water cooled condenser
	3 <sup>rd</sup>	Heat rejection ratio.
	4 <sup>th</sup>	Cooling tower and spray pond.
7 <sup>th</sup>	1 <sup>st</sup>	EVAPORATORS Principle of working and constructional details of an evaporator
	2 <sup>nd</sup>	Types of evaporator
	3 <sup>rd</sup>	Bare tube coil evaporator, finned evaporator, shell and tube evaporator
	4 <sup>th</sup>	REFRIGERANT FLOW CONTROLS, REFRIGERANTS & APPLICATION OF REFRIGERANTS EXPANSION VALVES Capillary tube
8 <sup>th</sup>	1 <sup>st</sup>	Automatic expansion valve
	2 <sup>nd</sup>	Thermostatic expansion valve
	3 <sup>rd</sup>	REFRIGERANTS Classification of refrigerants
	4 <sup>th</sup>	Desirable properties of an ideal refrigerant
9 <sup>th</sup>	1 <sup>st</sup>	Designation of refrigerant
	2 <sup>nd</sup>	Thermodynamic Properties of Refrigerants.
	3 <sup>rd</sup>	Chemical properties of refrigerants.
	4 <sup>th</sup>	commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717
10 <sup>th</sup>	1 <sup>st</sup>	Substitute for CFC
	2 <sup>nd</sup>	Applications of refrigeration, cold storage
	3 <sup>rd</sup>	dairy refrigeration, ice plant
	4 <sup>th</sup>	water cooler, frost free refrigerator
11 <sup>th</sup>	1 <sup>st</sup>	PSYCHOMETRICS & COMFORT AIR CONDITIONING SYSTEMS Psychometric terms

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