

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2023-2024

Discipline: Mechanical Engg. Semester: 5th

Subject: RAC

Name of the Teaching Faculty: Shashanka Seshare Bhoi

Subject: RAC No. of Days/per week class allotted 04

Semester From Date: 01/08/2023 To Date: 30/11/2023 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
01	01	Introduction to Air Refrigeration Cycle.
	02	Definition of refrigeration and unit of Refrigeration.
	03	Definition of COP, Refrigeration effect
	04	Principle of working of open and closed air system of refrigeration.
02	01	Calculation of COP of Bell-Coleman cycle and numerical on it.
	02	Introduction to simple vapour compression refrigeration system.
	03	Schematic diagram of simple vapour compression refrigeration system.
	04	Types of simple vapour compression system.
03	01	Cycle with dry saturated vapours after compression.
	02	Cycle with wet vapour after compression.
	03	Cycle with superheated vapours after compression.
	04	Cycle with superheated vapours before compression.

Shyamrao Seshare Bhoir
Signature of the Faculty

Subject: RAC No. of Days/per week class allotted 04

Semester From Date: 01/08/2023 To Date: 30/11/2023 No. of Weeks: 15

Week	Class Day	Theory /Practical Topics
04	01	Cycle with subcooling of refrigerant.
	02	Representation of above cycle on temperature entropy and pressure enthalpy diagram.
	03	Numerical on above (determination of COP & mass flow)
	04	Introduction to vapour absorption refrigeration system.
05	01	Simple vapour absorption refrigeration system.
	02	Practical vapour absorption refrigeration system.
	03	COP of an ideal vapour absorption refrigeration system.
	04	Numerical on COP.
06	01	Overall chapter discussion.
	02	Introduction to refrigeration equipments.
	03	Refrigerant compressors.
	04	Principle of working and constructional details of air cooled and water refrigerating and rotary compressor.

Shashanka Sengar Bhoi
Signature of the Faculty

Subject: RAC No. of Days/per week class allotted 04

Semester From Date: 01/08/2023 To Date: 30/11/2023 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
07	01	Centrifugal compressor only theory.
	02	Important terms.
	03	Hermitically and semi hermitically sealed compressor.
	04	Principle of working of air cooled and water cooled condenser.
08	01	cooling tower and spray pond.
	02	Principle of working of an evaporator.
	03	Types of evaporator.
	04	Bare tube coil evaporator, finned tube evaporator, shell and tube evaporator.
09	01	Expansion valves
	02	capillary tube
	03	Classification of refrigerants
	04	Desirable properties of an ideal refrigerant.

Shashanka Sanyal Bhoi
Signature of the Faculty

Subject: RAC No. of Days/per week class allotted 04

Semester From Date : 01/08/2023 To Date : 30/11/2023 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
10	01	commonly used refrigerants.
	02	Application of refrigeration
	03	substitute of CFC.
	04	overall chapter discussion.
11	01	psychometric terms
	02	psychometric chart and uses.
	03	Sensible heating and cooling
	04	Cooling and Dehumidification
12	01	Heating and Humidification
	02	Adiabatic cooling with humidification.
	03	Total heating of a cooling process
	04	SHF, BPF

Sharhans Seshar Bhori
Signature of the Faculty

Subject: RAC No. of Days/per week class allotted 04

Semester From Date: 01/08/2023 To Date: 30/11/2023 No. of Weeks: 15

Week	Class Day	Theory /Practical Topics
13	01	Adiabatic mixing
	02	Effective temperature and comfort chart
	03	Introduction to Air conditioning systems
	04	Factors affecting comfort air conditioning
14	01	Equipment used in an air conditioning
	02	Classification of air conditioning system
	03	Factors affecting comfort air conditioning
	04	Equipments used in an air conditioning
15	01	Classification of air conditioning system
	02	Winter air conditioning system
	03	Summer air conditioning system
	04	Numerical on above

Shashanka Suresh Bhoi

Signature of the Faculty