

"PVC" NSSK GOVT POLYTECHNIC BILASPUR
PLANNED THEORY SYLLABUS COVERAGE

Department: Mechanical Engg.			Subject: Refrigeration and Air Conditioning			
Sem. & Branch: 6th / Mech. Engg.			Duration: 3 Year			
Syllabus coverage		TEACHER	SUMIT SHARMA			
		Total periods:-56				
SR. NO	Period no	Topic	Details	Instruction Reference	Additional study	Remarks
1	1-8	Principles of Refrigeration	Meaning, Refrigeration Methods, Units of Refrigeration, Reversed Carnet cycle, Heat pump, Coefficient of Performance, Rating of refrigeration machines	Refrigeration and Air Conditioning by R.S Khurmi by S Chand and Company	1. Refrigeration & air conditioning by Domkundwar, Dhanpat Rai & Sons	
2	09-17	Refrigeration Systems	Air refrigeration cycle- applications and its limitations, Vapour Compression Cycle, Effect of sub cooling and super heating, Departure of Actual vapour compression cycle from theoretical cycle, Effect of varying condensing and suction temperature on coefficient of performance, Simple mathematical calculation with pressure-enthalpy charts, Vapour Absorption cycle, Actual vapour absorption cycle and application		2. Refrigeration and Air Conditioning by C.P Arora Tata Mc Graw Hills	
3	18-24	Refrigerants	Important properties of a refrigerant, Properties and applications of commonly used refrigerants such as R11, R12, R22, NH3 and Water, Newer Refrigerants		3. Refrigeration & Air condition by A.S Saroq Satyaprakashan	
4	25-31	Refrigeration System, Components and Controls	Function, types, specification and constructional details of components such as compressor, condenser, throttling device, evaporator, oil separator, accumulator, header. Various controls- Solenoid Valve, thermostat, low pressure/high pressure cut out, oil safety switch			
5	32-38	Psychometry	Various terms-Dry and wet bulb temperatures, Saturation, Dew point, adiabatic saturation, temperature, Relative humidity, absolute humidity, humidity ratio. Psychometric chart and its uses, Psychometric processes-Sensible heating and sensible cooling, humidification and dehumidification, cooling and dehumidification, heating and humidification, and their representation on psychometric chart, Simple Problems			
6	39-43	Air-conditioning	Introduction, Metabolism in human body, Human comfort, Applications of air-conditioning			
7	44-48	Heat Loads	Various types of loads, Sensible and latent heat load, Load calculations			
8	49-53	Air-conditioning System	Description of room air conditioner, Central air-conditioning system, Round the year air conditioning system, Air distribution systems: concept of filter, damper, fan, blower, air register and diffuser			
9	54-56	Miscellaneous Topics	Evaporative cooling - Principle, Desert air cooler			

Sumit Sharma
 Sr. Lecturer,
 Mech. Grp.
 27/01/24

Approved	27/01/24	Sign HOD/ IOC	
----------	----------	---------------	--