

LESSION PLAN

Discipline: Mechanical Engg	Semester : 4th Sem Mech	Name of faculty: Biswajit Mishra
Sub: TE-II	No of Days/week class allotted :- 4	Total no of weeks:- 15 Session: 2024-25 (Summer)
No of Week	No Of Class Planned	Topic to be taught
1 st	1 st	IC Engine overview (Why should we study)
	2 nd	Indicated poer, brake power, friction power
	3 rd	Numericals
	4 th	Specific fuel consumption, air consumption, Air-fuel ratio
2 nd	1 st	Numericals
	2 nd	Efficiencies of IC engines: $\eta_{bth}, \eta_{ith}, \eta_{mech}, \eta_{rel}, \eta_{vol}$
	3 rd	Numericals
	4 th	Functions & use of air compressor (Why should we study)
3 rd	1 st	Principle of operation & classification of air compressor
	2 nd	Reciprocating air compressor terminology
	3 rd	Indicated work for 1-acting compressor without clearance, Mep
	4 th	Numericals
4 th	1 st	Power, mechanical efficiency of air compressor
	2 nd	2-Stage compressor work done with clearance, Numericals
	3 rd	Adiabatic, compressor & isothermal efficiency
	4 th	Numericals
5 th	1 st	Volumetric efficiency, Free air delivery
	2 nd	Numericals
	3 rd	Class Test-I
	4 th	Introduction: Difference between vapour & steam
6 th	1 st	Pure substance: Introduction (Why should we study)
	2 nd	Phases & phase change phenomena of pure substance
	3 rd	Terminology: property diagrams
	4 th	p-v, T-s, h-s diagrams with phases of pure substance
7 th	1 st	Critical & triple point: Enthalpy change
	2 nd	Wet steam, superheated steam, Specific vol. of steam: Numericals
	3 rd	Internal energy of steam, Entropy of pure substance
	4 th	Dryness fraction, Introduction to steam table
8 th	1 st	Mollier diagram: Introduction with key points
	2 nd	Numericals
	3 rd	Numericals
	4 th	Classification & types of Boiler
9 th	1 st	fire tube & Water tube Boiler
	2 nd	Description & working of Cochran Boiler
	3 rd	Description & working of Lancashire boiler
	4 th	Description & working of Babcock & Wilcox boiler
10 th	1 st	High pressure boilers
	2 nd	Boiler draught: functions of draught, classification

	3 rd	Natural draught: height & diameter of chimney
	4 th	Artificial draught: Numericals
11 th	1 st	Efficiencies of boiler: Numericals
	2 nd	Boiler mountings & accessories
	3 rd	Class Test-II
	4 th	Steam power cycle overview (Why should we study)
12 th	1 st	Carnot cycle: work, efficiency calculation
	2 nd	Rankine cycle: p-v, T-s, h-s diagrams, mollier diagram
	3 rd	Work & efficiencies of Rankine cycle
	4 th	Numericals
13 th	1 st	Effect of operating variables on Rankine cycle
	2 nd	Reheat cycle, regenerative cycle
	3 rd	Numericals
	4 th	Introduction to heat transfer (Scope of heat transfer), Modes of heat transfer
14 th	1 st	Fourier's law of heat conduction: Numericals
	2 nd	Thermal conductivity: Numericals
	3 rd	Convection: Newton's law of cooling : Numericals
	4 th	Radiation: Steffan-Boltzman law, Kirchhoff's law
15 th	1 st	Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility
	2 nd	Quiz test: previous year question answer
	3 rd	Previous year question answer
	4 th	Previous year question answer

Prepared by:

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29/1/2025

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