

PNS SCHOOL OF ENGINEERING & TECHNOLOGY, MARSHAGHAI, KENDRAPARA

LESSON PLAN

Discipline : Automobile	Semester: 3rd	Name of the Teaching Faculty :Er. Ramakanta Swain
Subject : THERMAL ENGINEERING-I	No. of Days / per week class allotted : 6	Semester From date : 01.08.2023 to Date :30.11.2023 No. of Weeeks : 12
Week	Class Day	Topics
1st	1st	Thermodynamic Systems
	2nd	closed, open, isolated
	3rd	Thermodynamic properties of a system
	4th	pressure, volume, temperature
	5th	simple problem solved
	6th	simple problem solved
2nd	1st	entropy, enthalpy, Internal energy
	2nd	units of measurement
	3rd	units of measurement
	4th	Intensive and extensive properties
	5th	Define thermodynamic processes
	6th	simple problem solved
3rd	1st	Path, cycle, state
	2nd	Path function, Point function
	3rd	Thermodynamic Equilibrium.
	4th	Quasi-static Process
	5th	simple problem solved
	6th	Conceptual explanation of energy and its sources
4th	1st	Work , heat, Comparison between the two
	2nd	Mechanical Equivalent of Heat
	3rd	simple problem solved
	4th	Work transfer, Displacement work
	5th	State & explain Zeroth law of thermodynamics
	6th	State & explain First law of thermodynamics
5th	1st	simple problem solved
	2nd	Limitations of First law of thermodynamics
	3rd	Application of First law of Thermodynamics
	4th	C.O.P (solve simple numerical)
	5th	Laws of perfect gas Boyle's law
	6th	simple problem solved
6th	1st	Charle's law
	2nd	Avogadro's law
	3rd	Dalton's law of partial pressure
	4th	simple problem solved
	5th	Guy lussac law
	6th	General gas equation

7th	1st	simple problem solved
	2nd	characteristic gas constant
	3rd	Universal gas constant
	4th	simple problem solved
	5th	Explain specific heat of gas (C_p and C_v)
	6th	Explain specific heat of gas (C_p and C_v)
8th	1st	Relation between C_p & C_v
	2nd	simple problem solved
	3rd	Enthalpy of a gas
	4th	Work done during a non- flow process
	5th	Application of first law of thermodynamics to various non flow process
	6th	simple problem solved
9th	1st	Isothermal, Isobaric
	2nd	Isentropic and polytropic process
	3rd	Solve simple problems on above.
	4th	simple problem solved
	5th	Free expansion & throttling process
	6th	Explain I.C engine
10th	1st	classify I.C engine
	2nd	simple problem solved
	3rd	Terminology of I.C Engine such as bore, dead centers, stroke volume,
	4th	Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine.
	5th	Differentiate between 2-stroke & 4- stroke engine C.I & S.I engine.
	6th	simple problem solved
11th	1st	Carnot cycle
	2nd	simple problem solved
	3rd	Otto cycle.
	4th	simple problem solved
	5th	Diesel cycle.
	6th	Dual cycle.
12th	1st	Define Fuel.
	2nd	Types of fuel.
	3rd	Application of different types of fuel.
	4th	simple problem solved
	5th	Heating values of fuel.

Signature of H.O.D, Mechanical

Signature of Lecturer