Government Polytechnic Mayurbhanj, Tikarpada || Lesson Plan

Discipline : MECHANICAL ENGG.	Semester: 3RD Sem	Name of the Teaching Faculty : SASMITA SAHA	
Subject : TE-1	No. of Days / per week class allotted : 04	Semester From date : 01.08.2023	To Date : 30.11.2023

MONTH	Week	Day	Topics
AUGUST	1st	2nd	**Thermodynamic concept & Terminology**
		3rd	Thermodynamic Systems (closed, open, isolated)
		4th	Thermodynamic properties of a system
	2nd	1st	pressure, volume, temperature entropy, enthalpy, Internal energy and units of measurement
		2nd	Intensive and extensive properties
		3rd	Define thermodynamic processes, path, cycle , state, path function, point function.
		4th	Thermodynamic Equilibrium. Quasi-static Process
	3rd	1st	Conceptual explanation of energy and its sources
		3rd	Work , heat and comparison between the two.
		4th	Mechanical Equivalent of Heat.
	4th	1st	Work transfer, Displacement work
		2nd	**Laws of Thermodynamics**
		3rd	**Laws of Thermodynamics**
		4th	State & explain Zeroth law of thermodynamics.
	5th	1st	Second law of thermodynamics (Clausius & Kelvin Planck statements).
		2nd	Second law of thermodynamics (Clausius & Kelvin Planck statements).
		4th	Application of second law in heat engine, heat pump, refrigerator & determination of
SEPTEMBER	2nd	1st	Application of second law in heat engine, heat pump, refrigerator & determination of
		2nd	solve simple numerical
		4th	**Properties Processes of perfect gas**
	3rd	1st	Laws of perfect gas, Boyle's law, Charle's law, Avogadro's law,
		2nd	Dalton's law of partial pressure, Guy lussac law
		3rd	General gas equation, characteristic gas constant, Universal gas constant.
		4th	Explain specific heat of gas (Cp and Cv) Relation between Cp & Cv.
	4th	1st	Application of first law of thermodynamics to various non flow process (Isothermal, Isobaric,
		4th	Solve simple problems on above.
	5th	1st	Free expansion & throttling process.
		2nd	Enthalpy of a gas.
		3rd	Work done during a non- flow process.
		4th	Application of first law of thermodynamics
OCTOBER	1st	2nd	First law of thermodynamics to various non flow process (Isothermal, Isobaric, Isentropic and polytrophic process)
		3rd	First law of thermodynamics to various non flow process (Isothermal, Isobaric, Isentropic and polytrophic process)
		4th	Solve simple problems on above.
	2nd	1st	Free expansion & throttling process.
		2nd	Free expansion & throttling process.
		3rd	Internal combustion engine
		4th	Internal combustion engine
	3rd	1st	Explain & classify I.C engine.
		2nd	Terminology of I.C Engine such as bore, dead centers, stroke volume, piston speed &RPM.
		3rd	Terminology of I.C Engine such as bore, dead centers, stroke volume, piston speed &RPM.
		4th	Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine.
	4th	3rd	Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine.
		4th	Differentiate between 2-stroke & 4- stroke engine C.I & S.I engine.
	5th	1st	Differentiate between 2-stroke & 4- stroke engine C.I & S.I engine.
		2nd	Gas Power Cycle
NOVEMBER	1st	3rd	Gas Power Cycle
		4th	Carnot cycle
	2nd	1st	Carnot cycle
		2nd	Otto cycle.
		3rd	Otto cycle.
		4th	Diesel cycle.
	3rd	1st	Diesel cycle.
		2nd	Dual cycle.
		3rd	Dual cycle.
		4th	Solve simple numerical
	4th	1st	Fuels and Combustion
		2nd	Define Fuel.Types of fuel
		3rd	Application of different types of fuel.
		4th	Heating values of fuel
	5th	2nd	Quality of I.C engine fuels Octane number, Cetane number
		3rd	Revision
		4th	Revision