Discipline : Mechanical Engg.	Semester : 3Rd	Name of the Teachnig Faculty : Mrs. Monalisha Behera
Subject : Thermal Engineering	No.of days/Per weeks Class Alloted Weeks :4	SEMESTER FROM DATE:15/09/2022 TO DATE:22/12/2022
Weeks	Class day	
3rd(sept-2020)	1st	Theory Thermodynamic Systems (closed, open, isolated) 1.2 Thermodynamic properties of a system (pressure, volume, temperature, entropy, enthalpy, Internal energy and units of measurement).
	2nd	Intensive and extensive properties 1.4 Define thermodynamic processes, path, cycle , state, path function, point function. 1.5 Thermodynamic Equilibrium.
	3rd	Quasi-static Process. 1.7 Conceptual explanation of energy and its sources 1.8 Work , heat and comparison between the two.
	4th	Mechanical Equivalent of Heat. 1.10Work transfer, Displacement work
4th(sept-2020)	1st	State & explain Zeroth law of thermodynamics. 12 2.2 State & explain First law of thermodynamics.
	2nd	Limitations of First law of thermodynamics 2.4Application of First law of Thermodynamics (steady flow energy equation)
	3rd	steady flow energy equation and its application to turbine and compressor
	4th	Second law of thermodynamics (Claucius & Kelvin Plank statements). 2.5 Application of second law in heat engine
2nd(oct-2020)	1st	Heat pump, refrigerator & determination of efficiencies & C.O.P (solve simple numerical)
		CLASS TEST-1
	2nd	heat pump, refrigerator & determination of efficiencies & C.O.P (solve simple numerical)
	3rd	heat pump, refrigerator & determination of efficiencies & C.O.P (solve simple numerical)
	4th	heat pump, refrigerator & determination of efficiencies & C.O.P (solve simple numerical)
3rd(oct-2020)	1st	Explain & classify I.C engine
	2nd	Terminology of I.C Engine such as bore, dead centers, stroke volume, piston speed &RPM
	3rd	Explain the working principle of 2-stroke S.I engine
	4th	Explain the working principle of 2-stroke c.I engine
4th(oct-2020)	1st	Explain the working principle of -stroke S.I engine
	2nd	Explain the working principle of -stroke S.I engine
	3rd	Differentiate between 2-stroke C.I & S.I.

	4th	Differentiate between 4-stroke C.I & S.I.
1st(Nov-2020)	1st	Carnot cycle
	2nd	2 Otto cycle
	3rd	Numericals
	4th	Diesel cycle.
2nd(Nov-2020)	1st	Numericals
	2nd	Dual cycle.
	3rd	Numericals
	4th	Numericals
3rd(Nov-2020)	1st	INTERNAL
	2nd	
	3rd	
	4th	
4th(Nov-2020)	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 betwee Cp & Cv,Enthalpy of a gas.
1st(Dec-2020)	1st	Application of first law of thermodynamics to various non flow process (Isothermal, Isobaric, Isentropic and polytrophic process)
	2nd	Application of first law of thermodynamics to various non flow process (Isothermal, Isobaric, Isentropic and polytrophic process)
	3rd	Solve simple problems on above.
	4th	Solve simple problems on above.
2nd(Dec-2020)	1st	Free expansion & throttling process.
		CLASS TEST-2
	2nd	Free expansion & throttling process.
	3rd	Define Fuel
	4th	Types of fuel.
3rd(Dec-2020)	1st	Application of different types of fuel.
	2nd	Application of different types of fuel.
	3rd	Heating values of fuel.
	4th	Quality of I.C engine fuels Octane number, Cetane number.

Bohera
16/09/2022
(M. Bohera
Sr. Lect Mech)