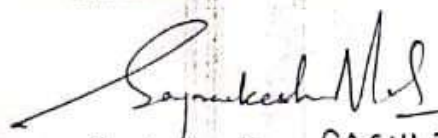


	3RD	Explain specific heat of gas (C_p and C_v)
	4TH	Relation between C_p & C_v
8TH	1ST	Enthalpy of a gas.
	2ND	Work done during a non-flow process.
	3RD	Application of first law of thermodynamics to various non flow process (Isothermal, Isobaric, Isentropic and polytropic process)
	4TH	Solve simple problems on above.
9TH	1ST	Solve simple problems on above.
	2ND	Free expansion & throttling process
	3RD	Explain & classify I.C engine.
	4TH	Terminology of I.C Engine such as bore, dead centers, stroke volume, piston speed & RPM.
10TH	1ST	Terminology of I.C Engine such as bore, dead centers, stroke volume, piston speed & RPM.
	2ND	Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine
	3RD	Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine
	4TH	Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine
11TH	1ST	Differentiate between 2-stroke & 4- stroke engine C.I & S.I engine
	2ND	Differentiate between 2-stroke & 4- stroke engine C.I & S.I engine
	3RD	Carnot cycle
	4TH	Otto cycle
12TH	1ST	Diesel cycle.
	2ND	Dual cycle
	3RD	Solve simple numerical
	4TH	Solve simple numerical
13TH	1ST	Solve simple numerical
	2ND	Solve simple numerical
	3RD	Solve simple numerical
	4TH	Solve simple numerical
14TH	1ST	Define Fuel.
	2ND	Types of fuel.
	3RD	Application of different types of fuel.
	4TH	Application of different types of fuel.
15TH	1ST	Heating values of fuel.
	2ND	Quality of I.C engine fuels Octane number, Cetane number.
	3RD	Quality of I.C engine fuels Octane number, Cetane number.
	4TH	Quality of I.C engine fuels Octane number, Cetane number.


SIGN OF FACULTY 14/8/23


SIGN OF HOD

Discipline MECHANICALENGG	Semester :3 rd	Name of the Teaching Faculty: SANGRAM KESHARI MOHANTY
Subject: THERMAL ENGINEERING-I	No. of days/per week class allotted: 04	No. of Weeks: 15
Week	Class Day	Theory / Practical Topics
1 st	1 st	Thermodynamic Systems (closed, open, isolated) enthalpy, Internal energy and units of measurement).
	2 nd	Thermodynamic properties of a system (pressure, volume, temperature, entropy).
	3 rd	Thermodynamic properties of a system (pressure, volume, temperature, entropy).
	4 th	Intensive and extensive properties
2 nd	1 st	Define thermodynamic processes, path, cycle, state, path function, point function
	2 nd	Define thermodynamic processes, path, cycle, state, path function, point function
	3 rd	Thermodynamic Equilibrium.
	4 th	Quasi-static Process.
3 rd	1 st	Conceptual explanation of energy and its sources
	2 nd	Work, heat and comparison between the two
	3 rd	Mechanical Equivalent of Heat.
	4 th	Work transfer, Displacement work
4 th	1 st	State & explain Zeroth law of thermodynamics.
	2 nd	State & explain First law of thermodynamics.
	3 rd	Limitations of First law of thermodynamics
	4 th	Application of First law of Thermodynamics (steady flow energy equation and its application to turbine and compressor)
5 th	1 st	Application of First law of Thermodynamics (steady flow energy equation and its application to turbine and compressor)
	2 nd	Second law of thermodynamics (Clausius & Kelvin Plank statements).
	3 rd	Second law of thermodynamics (Clausius & Kelvin Plank statements).
	4 th	Application of second law in heat engine, heat pump, refrigerator & determination of efficiencies & C.O.P
6 th	1 st	Application of second law in heat engine, heat pump, refrigerator & determination of efficiencies & C.O.P (solve simple numerical)
	2 nd	(solve simple numerical)
	3 rd	(solve simple numerical)
	4 th	(solve simple numerical)
7 th	1 st	Laws of perfect gas: Boyle's law, Charles's law, Avogadro's law, Dalton's law of partial pressure, Gay Lussac law, General gas equation, characteristic gas constant, Universal gas constant.
	2 nd	Laws of perfect gas: Boyle's law, Charles's law, Avogadro's law, Dalton's law of partial pressure, Gay Lussac law, General gas equation, characteristic gas constant, Universal gas constant.