SESSION:	WINTER 2023
BRANCH:	MECHANICAL ENGINEERING
SEMESTER:	3RD SEC-A
SUBJECT:	THERMAL ENGINEERING (TH-4)
NAME OF THE FACULTY:	JITENDRA SANTRA

SL NO.	MONTH	CHAPT. NO.	DATE	TOPICS TO BE COVERED	NO. OF ACADEMIC DAYS AVAILABLE FOR THE SUBJECT	% COVERED
1	AUGUST	1	4.8.23	CH-1,1.1:Thermodynamic Systems (closed, open, isolated)	17	29%
			5.8.23	1.2:Thermodynamic properties of a system (pressure, volume, temperature, entropy,		
			9.8.23	1.2:Thermodynamic properties of a system (pressure, volume, temperature, entropy,		
			10.8.23	1.2:enthalpy, Internal energy and units of measurement).		
			11.8.23	1.3:Intensive and extensive properties		
			12.8.23	1.4:Define thermodynamic processes, path, cycle , state, path function, point function		
			16.8.23	1.5:Thermodynamic Equilibrium		
			17.8.23	1.6Quasi-static Process		
			18.8.23	1.7:Conceptual explanation of energy and its sources		
			19.8.23	1.8:Work , heat and comparison between the two.		
			21.8.23	1.9:Mechanical Equivalent of Heat 1.10 Work transfer, Displacement work		
		3	23.8.23	CH-3,3.1:Laws of perfect gas:Boyle's law, Charle's law		
			24.8.23	Avogadro's law, Dalton's law of partial pressure, Guy lussac law, General gas equation,		
			25.8.23	Avogadro's law, Dalton's law of partial pressure, Guy lussac law, General gas equation,		
			26.8.23	Avogadro's law, Dalton's law of partial pressure, Guy lussac law, General gas equation,		
			28.8.23	characteristic gas constant, Universal gas constant		
			31.8.23	3.2:Explain specific heat of gas (Cp and Cv)		

2	SEPT.	3		1.9.23	3.3:Relation between Cp & Cv.	19	33%
				2.9.23	3.4:Enthalpy of a gas 3.5:Work done during a non- flow process		
				4.9.23	3.5:Application of first law of thermodynamics to various non flow process (Isothermal, Isobaric, Isentropic and polytrophic process)		
				7.9.23	Application of first law of thermodynamics to various non flow process (Isothermal, Isobaric, Isentropic and polytrophic process)		
				8.9.23	3.6Solve simple problems on above		
				9.9.23	Solve simple problems on above		
				11.9.23	Solve simple problems on above		
				13.9.23	3.7:Free expansion & throttling process		
				14.9.23	Solve simple problems on above		
			2	15.9.23	CH-2,2.1:State & explain Zeroth law of thermodynamics		
				16.9.23	2.2State & explain First law of thermodynamics		
				21.9.23	2.3Limitations of First law of thermodynamics		
				22.9.23	2.4:Application of First law of Thermodynamics (steady flow energy equation and its application to turbine and compressor)		
				23.9.23	2.4:Second law of thermodynamics (Claucius & Kelvin Plank statements		
				25.9.23	2.5:Application of second law in heat engine, heat pump, refrigerator & determination of		
				27.9.23	2.5:Application of second law in heat engine, heat pump, refrigerator & determination of		
				28.9.23	efficiencies & C.O.P		
				29.9.23	solve simple numerical		
				30.9.23	solve simple numerical		
3	OCT.	4	2	4.10.23	solve simple numerical	9	16%
				5.10.23	solve simple numerical		
				6.10.23	CH-4,4.1:Explain & classify I.C		
				7.10.23	Explain & classify I.C engine		
				9.10.23	4.2:Terminology of I.C Engine such as bore, dead centers, stroke volume, piston speed &RPM		
				11.10.23	4.3:Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine		
				12.10.23	Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine		

			13.10.23	4.4:Differentiate between 2-stroke & 4-stroke engine C.I & S.I engine.		
		5	14.10.23	CH-5,5.1:Carnot cycle		
4	NOV.	5	1.11.23	Solve simple numerical	13	22%
			2.11.23	5.2:Otto cycle.		
			3.11.23	Solve simple numerical		
			4.11.23	5.3:Diesel cycle.		
			6.11.23	Solve simple numerical		
			8.11.23	5.4:Dual cycle		
			9.11.23	5.4:Dual cycle		
			10.11.23	5.5:Solve simple numerical		
		6	13.11.23	CH-6,6.1:Define Fuel,6.2:Types of fuel		
			15.11.23	6.3:Application of different types of fuel,6.4:Heating values of fuel.		
			16.11.23	6.5:Quality of I.C engine fuels Octane number, Cetane number		
			17.11.23	Solve simple numerical		
			18.11.23	Solve simple numerical		

BRIEF SUMMARY OF THE PLAN

SL. NO.	MONTH	UNIT/CHAPTER TO BE COVERED	% COVERAGE
1	AUGUST	CHAPTER- 1 & 3	29%
2	SEPTEMBER	CHAPTER- 3 & 2	33%
3	OCTOBER	CHAPTER- 2 , 4 & 5	16%
4	NOVEMBER	CHAPTER- 5 & 6	22%

J. Sankar
03-08-23
signature of faculty

signature of HOD 3/8/23

signature of Principal 3/8/23