

Lesson Plan

Subject: **THERMAL ENGINEERING-I** (Th 4) Name of faculty: **SATYABRATA KHILAR**

Semester: **3rd** Class allotted: **4p/week** Branch: **Mechanical** Session: **2023(W)**


Discipline	Semester	From date:	To date:	Teaching Aid
Subject:	No. of days/ per week	Theory/ Practical – Topics/Lesson		
Week	Date/Period			
1	01/08/2023	1. Thermodynamic concept & Terminology		White Board
	to	1.1 Thermodynamic Systems (closed, open, isolated)		Marker
	05/08/2023	1.2 Thermodynamic properties of a system		Smart board
		1.3 Intensive and extensive properties		
		➤ Intensive and extensive properties		
2	07/08/2023	1.4 Define thermodynamic processes, path, cycle		White Board
	to	➤ state, path function, point function.		Marker
	12/08/2023	1.5 Thermodynamic Equilibrium.		Smart board
		1.6 Quasi-static Process		
		1.7 Conceptual explanation of energy and its sources		
3	14/08/2023	1.8 Work, heat and comparison between the two.		White Board
	to	➤ and comparison between the two.		Marker
	19/08/2023	1.9 Mechanical Equivalent of Heat.		Smart board
		1.10 Work transfer,		
		➤ Displacement work		
4	21/08/2023	2. Laws of Thermodynamics		White Board
	to	2.1 State & explain Zeroth law of thermodynamics.		Marker
	26/08/2023	➤ Zeroth law of thermodynamics.		Smart board
		2.2 State & explain First law of thermodynamics.		
		➤ First law of thermodynamics.		
5	28/08/2023	2.3 Limitations of First law of thermodynamics		White Board
	to	2.4 Application of First law of Thermodynamics		Marker
	02/09/2023	➤ steady flow energy equation		Smart board
		➤ and its application to turbine and compressor		
		2.4 Second law of thermodynamics		
6	04/09/2023	➤ Clausius & Kelvin Plank statements		White Board
	to	2.5 Application of second law in heat engine,		Marker
	09/09/2023	➤ heat pump, refrigerator		Smart board
		➤ & determination of efficiencies & C.O.P		
		➤ solve simple numerical		
7	11/09/2023	3. Properties Processes of perfect gas		White Board
	to	3.1 Laws of perfect gas: Boyle's law, Charle's law,		Marker
	16/09/2023	➤ Avogadro's law, Dalton's law,		Smart board
		➤ Guy lussac law, General gas equation,		
		➤ characteristic & Universal gas constant		

Signature of HOD

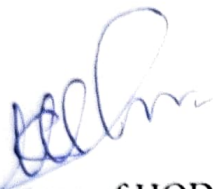
Signature of faculty

Week	Date/Period	Theory/ Practical –Topics/Lesson	Teaching Aid
8	18/09/2023	3.2 Explain specific heat of gas (Cp and Cv)	White Board
	to	3.3 Relation between Cp & Cv.	Marker
	23/09/2023	3.4 Enthalpy of a gas.	Smart board
		3.5 Work done during a non- flow process.	
		3.6 Application of first law of thermodynamics	
9	25/09/2023	Isothermal, Isobaric, Isentropic and polytropic	White Board
	to	3.6 Solve simple problems on above.	Marker
	30/09/2023	3.7 Free expansion & throttling process.	Smart board
		4. Internal combustion engine	
		4.1 Explain & classify I.C engine.	
10	03/10/2023	4.2 Terminology of I.C Engine	White Board
	to	bore, dead centers, stroke volume, piston speed	Marker
	07/10/2023	4.3 Explain the working principle of 2-stroke ➤ 4- stroke engine C.I & S.I engine	Smart board
11	09/10/2023		
	to	Internal Exam	
	14/10/2023		
12	16/10/2023	4.4 Differentiate between 2-stroke C.I & S.I engine.	White Board
	to	➤ 4- stroke engine C.I & S.I engine.	Marker
	20/10/2023	5. Gas Power Cycle	Smart board
		5.1 Carnot cycle	
13	30/10/2023	5.2 Otto cycle.	White Board
	to	➤ Otto cycle	Marker
	04/11/2023	5.3 Diesel cycle.	Smart board
		➤ Diesel cycle ➤ Diesel cycle	
14	06/11/2023	5.4 Dual cycle.	White Board
	to	➤ Dual cycle	Marker
	11/11/2023	5.5 Solve simple numerical.	Smart board
		➤ Solve simple numerical	
15	13/11/2023	6. Fuels and Combustion	White Board
	to	6.1 Define Fuel	Marker
	18/11/2023	➤ Define Fuel	Smart board
		6.2 Types of fuel.	
		➤ Types of fuel	
16	20/11/2023	6.3 Application of different types of fuel.	White Board
	to	6.4 Heating values of fuel.	Marker
	25/11/2023	6.5 Quality of I.C engine fuels	Smart board
		➤ Octane number, ➤ Cetane number.	

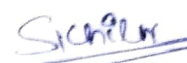

Signature of HOD


Signature of faculty

Week	Date/Period	Theory/ Practical –Topics/Lesson	Teaching Aid
17	28/11/2023	Revision...	White Board
	to	Revision...	Marker
	30/11/2023	Revision...	Smart board
		Revision...	



Signature of HOD



Signature of faculty