LESSON PLAN 2025(W)

SUBJECT:- Heat Transfer, Fluid Flow & Furnaces **SUBJECT CODE:- TH-2**

SEMESTER:-5th **BRANCH:-METALLURGICAL**

NAME OF FACULTY:- Sagarika Palei **CLASS ALLOTED:-4P/WEEK**

WEEKS	DATE	DATE :- FROM- 14/07/2025 TO 15/11/2025 THEORY- TOPIC/LESSON	TEACHING AID
1	15/07/2025 TO 19/07/2025	**1.FLUID FLOW** Discuss types of fluids (ideal and real). Discuss the type of flow (stream line & turbulent).	White board & Marker
2	21/07/2025 TO 26/07/2025	State and explain Bernoulli"s equation.	White board & Marker
3	28/07/2025 TO 02/082025	Discuss the flow through orifices, Pitot tube and venturies.	White board & Marker
4	04/08/2025 TO 09/08/2025	Define and calculate loss of head (friction loss) in straight pipes, in bends and channel with sudden enlargement and sudden contraction	White board & Marker
5	11/08/2025 TO 16/08/2025	2.**HEAT FLOW** . Discuss the elementary idea on different modes of heat transfer. Define and derive the Fourier"s law Explain & calculate the steady state heat conduction through flat walls.	White board & Marker
6	18/08/2025 TO 23/08/2025	Define Convection. Define and differentiate between natural and forced convection).	White board & Marker
7	25/08/2025 TO 30/08/2025	State the natural and forced heat transfer co-efficient (equation only, no derivation	White board & Marker
8	01/09/2025 TO 06/09/2025	Define radiations State the Stefan Boltzmann"s Define emissivity of black bodies and grey bodies	White board & Marker
9	08/09/2025 TO 13/09/2025	**3.Classification of Furnace. & Examples of some Metallurgical Furnaces** . Classify the furnaces based on use, heat source and material movements Discuss the following metallurgical furnaces (a) soaking pits,	White board & Marker
10	15/09/2025 TO 20/09/2025	(b) reheating furnace (c) heat treatment furnace (d) melting	White board & Marker

11	22/09/2025 TO 27/09/2025	(e) smelting (f) refining furnaces	White board & Marker
12	08/10/2025 TO 11/10/2025	4.**Principles of heat Generation in electric Furnaces** State the principles of heat generation in electric furnaces	White board & Marker
13	13/10/2025 TO 18/10/2025	. such as arc, resistance and induction (core less)	White board & Marker
14	20/10/2025 TO 25/10/2025	5.***Heat Losses, Heat Balance & Furnace Efficiency*** Discuss on heat losses, heat balance and furnace efficiency	White board & Marker
15	27/10/2025 TO 01/11/2025	**6.Waste heat Recovery System in Furnaces** Explain the types of waste heat recovery system	White board & Marker
16	03/11/2025 TO 08/11/2025	such as regenerators and recuperates.	White board & Marker
17	10/11/2025 TO 15/11/2025	Revision.....	White board & Marker

Signature of HOD

Signature of Faculty