

LESSON PLAN 2025(W)

SUBJECT:- HEAT TREATMENT TECHNOLOGY

SUBJECT CODE:- TH-3

SEMESTER:-5th

BRANCH:-METALLURGICAL

NAME OF FACULTY:- Sagarika Palei

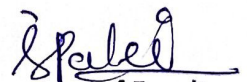
CLASS ALLOTTED:-4P/WEEK

WEEKS	DATE	DATE :- FROM- 14/07/2025 TO 15/11/2025	TEACHING AID
		THEORY- TOPIC/LESSON	
1	15/07/2025 TO 19/07/2025	Solid State Phase Transformation. Give an introduction to diffusion, state fick"s law. Discuss the formation of austenite.	White board & Marker
2	21/07/2025 TO 26/07/2025	Explain the mechanism of formation" of austenite Discuss austenitic grain size. Explain the methods of determination of austenitic grain size. State the importance of grain size Explain the method of measurement of grain size.	White board & Marker
3	28/07/2025 TO 02/082025	Discuss the methods of control austenitic grain size. Discuss decomposition of austenite and pearlitic transformation. Explain the process of construction of T-T-T diagram and CCT diagram.	White board & Marker
4	04/08/2025 TO 09/08/2025	Discuss the TTT Diagram for hypo eutectoid, eutectoid and hyper eutectoid steel. Explain bainitic transformation. Explain martensitic transformation	White board & Marker
5	11/08/2025 TO 16/08/2025	Heat Treatment Process for Steels Discuss annealing. Explain stress relieving annealing. Explain different types of annealing.	White board & Marker
6	18/08/2025 TO 23/08/2025	Explain the process of normalizing. Discuss the process of hardening. Describe the factors affecting hardening process.	White board & Marker
7	25/08/2025 TO 30/08/2025	Explain different methods of hardening Discuss quenching media and different types of quenchants. Explain the tempering process for steel.	White board & Marker
8	01/09/2025 TO 06/09/2025	Discuss thermo-mechanical treatment of steel. Discuss martempering, austempering and subzero treatment. Hardenability Define hardenability	White board & Marker
9	08/09/2025 TO 13/09/2025	Discuss the method of determination of hardenability (Gross Man"s critical diameter method & Jominey end quench method). Discuss the method of estimation of hardenability from chemical composition and fracture test	White board & Marker
10	15/09/2025 TO 20/09/2025	Discuss the factors affecting hardenability: effect of austenitic grain size, carbon content, and alloying elements	White board & Marker

11	22/09/2025 TO 27/09/2025	Surface Hardening Methods Discuss high frequency induction hardening -flame hardening, electron beam hardening, laser hardening. Discuss the methods of case depth measurement of steel.	White board & Marker
12	08/10/2025 TO 11/10/2025	Explain different carburizing-processes of steel: pack carburizing, liquid carburizing, gas carburizing and vacuum carburizing. Discuss the post carburizing heat treatment. Explain process of nitriding of steel	White board & Marker
13	13/10/2025 TO 18/10/2025	Explain the process of cyaniding, carbo-nitriding of steel Explain the plasma nitriding. Explain salt bath nitro carburizing. Explain boronising, chromizing & Toyato diffusion process.	White board & Marker
14	20/10/2025 TO 25/10/2025	Discuss the Heat Treatment of Non Ferrous Alloys. Discuss Age Hardening of Al-CU alloys.	White board & Marker
15	27/10/2025 TO 01/11/2025	Alloy Steels Discuss different alloy steels- low alloy and high alloy steels. Discuss the effect of alloying elements.	White board & Marker
16	03/11/2025 TO 08/11/2025	Discuss die steel, high speed steel, high strength, low alloy steels, stainless steels. Discuss the heat treatment of tool steel and stainless steel.	White board & Marker
17	10/11/2025 TO 15/11/2025	Revision.....	White board & Marker



Signature of HOD



Signature of Faculty