

LESSON PLAN 2025(W)

SUBJECT:- FUEL, FURNACE & REFRACTORIES

SUBJECT CODE:- TH-3

SEMESTER:-3rd

BRANCH:-METALLURGICAL

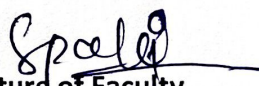
NAME OF FACULTY:- SAGARIKA PALEI

CLASS ALLOTTED:-3P/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	Introduction to Fuels Definition and classification of fuels (solid, liquid, and gaseous fuels) , Sources of fuel and their uses in industries,	White board & Marker
2	21/07/2025 TO 26/07/2025	Calorific value: gross and net calorific value ,Proximate and ultimate analysis of fuels ,Physical and chemical properties of fuels (moisture content, ash, sulfur, carbon content)	White board & Marker
3	28/07/2025 TO 02/082025	Types of Fuels (Solid Fuels Liquid Fuels Gaseous Fuels) Origin of Coal, Coal: types, composition, and classification , coking properties and swelling index of coal,	White board & Marker
4	04/08/2025 TO 09/08/2025	Carbonization of coal , Differentiate between H.T.C and L.T.C , Test carried out for coke(Shatter and Micum index)	White board & Marker
5	11/08/2025 TO 16/08/2025	Origin and constitution of petroleum .Discuss on flash point, fire point,	White board & Marker
6	18/08/2025 TO 23/08/2025	cloud point, pour point, aniline point, octane number and cetane number . Production and utilization of Methane,	White board & Marker
7	25/08/2025 TO 30/08/2025	water gas, producer gas, carbureted water gas, coke oven gas, blast furnace gas, natural gas, mixed gas.	White board & Marker
8	01/09/2025 TO 06/09/2025	Furnaces and Their Types Overview of Furnace, Types of Metallurgical furnaces (a) heat treatment furnace (b) melting furnace	White board & Marker
9	08/09/2025 TO 13/09/2025	, (c) smelting furnace (d) refining furnaces . Heat losses in furnace .Types of waste heat recovery system such as regenerators and recuperators.	White board & Marker
10	15/09/2025 TO 20/09/2025	Refractories – Basics and Classification Introduction to Refractory materials, Classification of Refractories,	White board & Marker
11	22/09/2025 TO 27/09/2025	properties of Refractories. Special refractories like high alumina, mullite, SiC, Zirconia .	White board & Marker

12	08/10/2025 TO 11/10/2025	Criteria for selection and types of refractories selected for blast furnace L.D furnace, arc furnace,	White board & Marker
13	13/10/2025 TO 18/10/2025	coke oven. Recent advancements in Fuels, Furnaces & Refractory Carbon Capture & Utilization (CCU) in Fuel Technologies: CO ₂ Sequestration in Industrial Applications,	White board & Marker
14	20/10/2025 TO 25/10/2025	Clean Coal Technologies, Advanced Refractory Materials: Nano-Refractories, Graphite-Based & Carbon-Composite Refractories	White board & Marker
15	27/10/2025 TO 01/11/2025	Ultra-High-Temperature Ceramics (UHTCs), Alternative Fuels for Industrial Heating: Waste-Derived Fuels, Hydrogen, Syngas, Carbon- Neutral and Carbon-Negative Technologies,	White board & Marker
16	03/11/2025 TO 08/11/2025	Eco-Friendly Furnace Technologies: Hybrid & Solar- Assisted Furnaces	White board & Marker
17	10/11/2025 TO 15/11/2025	Revision.....	White board & Marker


Signature of HOD


Signature of Faculty