

Lesson Plan

Subject- FUEL & REFRACTORIES (Code): TH.3 Name of faculty: Semester: 3rd

Class allotted : 50/60p Branch : METALLURGY Session: 2024(w)

Discipline	Semester	From date: 01/07/24 To date: 26/10/24	Teaching Aid
Subject:	No. of days/ per week: 4p/week	Theory/ Practical – Topics/Lesson	
Week	Date Period		
1	01/07/2024 TO 06/07/2024	1.0 Fuels : 1.1 Define the Fuel 1.2 Classify the types of fuel 1.3 State the importance of Solid, Liquid and Gaseous fuels 1.4 Describe different fuels and resources of india	White board & Marker
2	08/07/2024 TO 13/07/2024	2.0 Solid Fuels : 2.1 COAL : 2.1.1 Explain the origin of coal 2.1.2 State the composition of coal 2.1.3 Discuss the characteristics and significance of constituents 2.1.4 Distinguish between proximate and ultimate analysis 2.1.5 Define the calorific value of coal	White board & Marker
3	15/07/2024 TO 20/07/2024	2.1.6 Describe coking properties and swelling index of coal 2.1.7 Discuss the criteria of selection of metallurgical coal. 2.2 COKE : 2.1.1 Discuss the scope and objectives of carbonization of coal 2.1.2 Explain the carbonization of coal 2.1.3 Differentiate between high temperature carbonization and low temperature carbonization 2.1.4 State the merits and demerits of H.T.C and L.T.C 2.1.5 Discuss different tests carried out for coke (Shatter and Micum index)	White board & Marker
4	22/07/2024 TO 27/07/2024	3.0 Liquid Fuels 3.1.1 Explain origin and constitution of petroleum 3.1.2 Discuss the properties of petroleum products 3.1.3 Discuss the distillation process of crude petroleum 3.1.4 Explain the production and uses of coal tar.	White board & Marker

5	29/07/2024 TO 03/08/2024	3.1 Testing of liquid Fuels: 3.1.1 Define specific gravity, viscosity, flash point, cloud point & pour point, aniline point octane number and cetane number 3.1.2. Discuss the methods of testing of following properties: Specific gravity, viscosity, flash point, cloud point and pour point	White board & Marker
6	05/08/2024 TO 10/08/2024	4.0 Gaseous Fuels Explain the production and utilization of following gaseous fuels: Methane, water gas, producer gas, carbureted water gas, coke oven gas, blast furnace gas, natural gas, mixed gas.	White board & Marker
7	12/08/2024 TO 17/08/2024	5.0 Combustion 5.1 Discuss the elementary principle of combustion	White board & Marker

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8	20/08/2024 TO 24/08/2024	Hess's law of constant heat summation, Kirchoff's law. 5.2 Work out simple combustion calculation	White board & Marker
9	27/08/2024 TO 31/08/2024	6.0 Refractories : 6.1 Define and Classify Refractories 6.2 Explain the desirable properties of Refractories in details 6.3 Discuss the raw – materials,	White board & Marker
10	02/09/2024 TO 06/09/2024	methods of manufacturing and properties of silica, fire clay; magnesia, dolomite, chrome magnesite, graphite and magnesia carbon bricks	White board & Marker

11	09/09/2024 TO 13/09/2024	I.A	White board & Marker
12	14/09/2024 TO 21/09/2024	Special Refractories Discuss about the special refractories like high alumina, mullite, SIC, Zirconia	White board & Marker
13	23/09/2024 TO 28/09/2024	2. Give criteria for selection and types of refractories selected for blast furnace,	White board & Marker
14	30/09/2024 TO 05/10/2024	L.D., open hearth, arc furnace, ladle, soaking pit, coke oven,	White board & Marker
15	07/10/2024 TO 09/10/2024	reheating furnaces, copper smelting flash and reverberatory furnaces	White board & Marker

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16	17/10/2024 TO 19/10/2024	Revision	White board & Marker
17	21/10/2024 TO 26/10/2024	Revision	White board & Marker

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