LESSON PLAN

Discipline: **Metallurgy Engineering**			Semester: **3rd semester**	Name of the Teaching Faculty: **Miss Sitanjali Khuntia**
Subject: **Fuel & Refractories** Sub code: **Th.3**			No of days /week class allotted:**04/week**	Semester from Date: **01/08/2023 to 30/11/2023** No of weeks:**19**
Month	**Week**	**No of periods available**	**Class Day**	**Theory topics to be covered**
August	1st	02P	01-08-23	1.0 Fuels: 1.1 Define the Fuel 1.2 Classify the types of fuel
			02-08-23	1.3 State the importance of Solid, Liquid and Gaseous fuels
	2nd	04P	07-08-23	1.4 Describe different fuels and resources of India
			08-08-23	Solid Fuels: 2.1 COAL 2.1.1 Explain the origin of coal
			09-08-23	2.1.2 State the composition of coal
			10-08-23	2.1.3 Discuss the characteristics and significance of constituents
	3rd	03P	14-08-23	2.1.3 Discuss the characteristics and significance of constituents
			16-08-23	Revision
			17-08-23	2.1.4 proximate and ultimate analysis
	4th	04P	21-08-23	2.1.4 Distinguish between proximate and ultimate analysis
			22-08-23	2.1.5 Define the calorific value of coal
			23-08-23	2.1.5 Define the calorific value of coal & explaining bomb' calorimeter
			24-08-23	2.1.6 Describe coking properties and swelling index of coal
	5th	03P	28-08-23	2.1.7 Discuss the criteria of selection of metallurgical coal
			29-08-23	Revision
			31-08-23	Monthly Test
September	6th	03P	04-09-23	2.2 COKE: 2.1.1 Discuss the scope and objectives of carbonization of coal
			05-09-23	2.1.2 Explain the carbonization of coal
			07-09-23	2.1.2 Explain the carbonization of coal
	7th	04P	11-09-23	2.1.3 Differentiate between LTC & HTC
			12-09-23	2.1.4 State the merits and demerits of H.T.C and L.T.C
			13-09-23	2.1.5 Discuss different taste carried out for coke (Shatter and Micum index)

	8th	02P	14-09-23 18-09-23	3.0 Liquid Fuels 3.1.1 Explain origin and constitution of petroleum 3.1.2 Discuss the properties of petroleum products
	9th	04P	21-09-23 25-09-23 26-09-23 27-09-23 28-09-23	3.1.3 Discuss the distillation process of crude petroleum 3.1.3 Discuss the distillation process of crude petroleum 3.1.4 Explain the production and uses of coal tar. 3.1 Testing of liquid Fuels: 3.1.1 Define specific gravity, viscosity 3.1.1 Define flash point, cloud point & pour point, aniline point octane number and cetane number.
October	10th	03P	03-10-23 04-10-23 05-10-23	3.1.2. Discuss the methods of testing of following properties: Specific gravity, viscosity 3.1.2. Discuss the methods of testing of following properties: flash point, cloud point and pour point Revision
	11th	04P	09-10-23 10-10-23 11-10-23 12-10-23	Revision Internal assessment/Class Test 4.0 Gaseous Fuels: Explain the production and utilization of following gaseous fuels: Methane
	12th	04P	16-10-23 17-10-23 18-10-23 19-10-23	4.0 Gaseous Fuels: Explain the production and utilization of following gaseous fuels: water gas 4.0 Gaseous Fuels: Explain the production and utilization of producer gas 4.0 Carbureted water gas 4.0 Blast furnace gas
	13th	02P	25-10-23 26-10-23	4.0. Natural gas, 4.0 Coke oven gas
	14th	02P	30-10-23 31-10-23	4.0 Mixed gas 5.0 Combustion 5.1 Discuss the elementary principle of combustion
November	15th	02P	01-11-23 02-11-23	5.1 Hess's law of constant heat summation, 5.1 Explanation Kirchoff's law.
	16th	04P	06-11-23 07-11-23 08-11-23 09-11-23	5.2 Some important factors to remember for numerical calculations of combustion reactions. 5.2Work out simple combustion calculation. 5.2Work out simple combustion calculation. 5.2Work out simple combustion calculation.
	17th	04P	13-11-23 14-11-23 15-11-23	5.2Work out simple combustion calculation. Monthly Test 6.2 Explain the desirable properties of Refractories in details

		16-11-23	6.3 Discuss the raw – materials, methods of manufacturing and properties of silica, fireclay magnesia, dolomite, chrome magnesite, graphite and magnesia carbon bricks.
18th	04P	20-11-23	1. Special Refractories Discuss about the special refractories like high alumina, mullite, SIC, Zirconia
		21-11-23	1. Special Refractories Discuss about high alumina, mullite
		22-11-23	1. Special Refractories Discuss about SIC, Zirconia
		23-11-23	2. Give criteria for selection and types of refractories selected for blast furnace, L.D., open hearth, arc furnace, ladle, soaking pit, coke oven, reheating furnaces, copper smelting flash and reverberatory furnaces.
19th	03P	28-11-23	Revision & Doubt Clearing Class
		29-11-23	
		30-11-23	

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8-8-23
PRINCIPAL
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