PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH

LESSON PLAN

Session-2022-2023

Discipline: Metallurgical Engg. Semester: 3rd

Name of the Teaching Faculty: Dilip kumar Meher

Subject: FR No. of Days/per week class allotted 04

Semester From Date : 15/9/2022 To Date : 22/12/2022 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
1	1	Fuels Define fuel
	2	classify the types of fuel
	3	State the importance of solid, liquid & gaseous fuels
	4	Describe different fuels & resources of India
2	5	Solid fuels Explain the origin of coal
	6	State the composition of coal
	7	Discuss the characteristics & significance of constituents
	8	Difference between proximate & Ultimate analysis
3	9	Define C.V. of coal
	10	Describe Coking properties & Swelling Index of coal
	11	Criteria of selection of metallurgical coal
	12	Scope of Carbonization of coal with objectives

Signature of the Faculty

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Week	Class Day	Theory /Practical Topics
4	13	Explain carbonisation of coal
	14	Difference between HTC & LTC
	15	Merits & demerits of HTC & LTC
	16	Shatter & micum Index
5	17	Liquid fuels Origin of petroleum
	18	Explain Constitution of petroleum
	19	Explain constitution of petroleum
	20	Dismss the properties of petroleum products
6	21	Dismss the distillation process of crude petroleum
	22	Explain the production & uses of coal tar
	23	Define specific gravity, viscosity, flash point etc.
	24	Define pour point, aline point, octane no. etc.

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Week	Class Day	Theory /Practical Topics
7	25	Testing method of specific gravity, viscosity
	26	Testing method of flash point, cloud point & pour point
	27	Gaseous fuels Production of methane, watergas
	28	Utilisation of watergas & methane
8	29	Production & utilization of producer gas
	30	Production & utilization of Carbureted water gas
	31	Explain production & utilization of coke oven gas
	32	Production of Blast furnace gas
9	33	Utilisation of Blast furnace gas
	34	Explain production of natural gas
	35	Utilisation of natural gas
	36	Production of mixed gas with utilisation

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Semester From Date : 15/9/2022 To Date : 22/12/2022 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
10	37	Combustion Introduction to Combustion
	38	Discuss the elementry principle of combustion
	39	Hess's law of constant heat summation
	40	Hess's law of constant heat summation
11	41	Krichoff's law (Defination)
	42	Krichoff's law (explanation)
	43	Simple problems on combustion
	44	Simple problems on combustion
12	45	Refractories Define refractories
	46	classify refractories
	47	Properties of refractories
	48	Properties of refractories

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Semester From Date : 15/9/2022 To Date : 22/12/2022 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
13	49	Silica, fire clay (Raw material, manufacturing proces with properties)
	50	Magnesia, Dolomite (Raw material, manufacturing process with properties)
	51	Chrome magnesite (Raw material, manufacturing proces with properties)
	52	Graphite & magnesia, carbon bricks (Raw material, manufacturing process with properties)
14	53	Special Refractories Special properties as high alumina
	54	Special properties as mullite, SIC
	55	Special properties as Zirconia
	56	Selection of Refractories B/F, L.D (selection criteria of refractories)
15	57	open hearth B/F, arc furnace (selection criteria of refractories)
	58	Laddle & soaking pit (slection criteria & refractories)
	59	Cokeoven, Copper Smelting flash (selection criteria of refractories)
	60	Reheating furnace, reverberatory furnace (selection criteria of refractories)

Signature of the Faculty