

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF
ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN
Session-2023-2024

Discipline: Metallurgical Engg. Semester: 5th

Subject: HTFF

Name of the Teaching Faculty: Santosh Panda

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

Semester From Date: 1-8-23 To Date: 30-11-23 No. of Weeks: 15

Week	Class Day	Theory /Practical Topics
	1	Discuss types of fluids
	2	Discuss ideal fluids
	3	Discuss real fluids
	4	Discuss types of flows
	5	Discuss streamline flow
	6	Discuss turbulent flow
	7	state Bernoulli's equation
	8	Explain Bernoulli's equation
	9	Explain Bernoulli's equation
	10	Discuss flow through orifice
	11	Discuss Pitot tube
	12	Discuss venturries

Santosh Panda
Signature of the Faculty

Subject: HTFFF No. of Days/per week class allotted 4

Semester From Date: 1-8-23 To Date: 30-11-23 No. of Weeks: 15

Week	Class Day	Theory /Practical Topics
	13	Define friction loss in straight pipe (sudden enlargement & contraction)
	14	Define loss of head in bends (sudden enlargement)
	15	Loss of head in bends (sudden contraction)
	16	Loss of head in channels
	17	Discuss heat transfer
	18	Elementary idea on heat transfer
	19	Different modes of heat transfer
	20	Different modes of heat transfer
	21	Define Fourier's law
	22	Derive Fourier's law
	23	Define natural & forced convection
	24	Differentiate natural & forced convection

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Semester From Date: 1-8-23 To Date: 30-11-23 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
	25	Explain steady state heat conduction through flat walls
	26	Calculate heat conduction through flat walls
	27	Define Convection
	28	State natural heat transfer coefficient-
	29	State forced heat transfer coefficient-
	30	Define radiations
	31	state Stefan Boltzmann's law
	32	Define emissivity of black & grey bodies
	33	classify furnace
	34	Furnace based on use
	35	Furnace based on heat source
	36	Furnace based on material movements

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Semester From Date: 1-8-23 To Date: 30-11-23 No. of Weeks: 15

Week	Class Day	Theory /Practical Topics
	37	Furnace based on material movements
	38	Discuss soaking pits furnace
	39	Discuss reheating furnace
	40	Discuss heat treatment furnace
	41	Discuss melting furnace
	42	Discuss smelting & refining furnaces
	43	state principle of heat generation in furnaces
	44	state principle of heat generation in electric furnaces
	45	Heat generation in arc furnace
	46	Heat generation in resistance furnace
	47	Heat generation in induction (core less) furnace.
	48	Discuss heat losses

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Semester From Date: 1-8-23 To Date: 30-11-23 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
	49	Discuss heat losses
	50	Discuss heat balance
	51	Discuss heat balance
	52	Discuss furnace efficiency
	53	Discuss furnace efficiency
	54	Types of waste heat recovery system
	55	Types of waste heat recovery system
	56	Types of waste heat recovery system
	57	Explain regenerators
	58	Explain regenerators
	59	Explain recuperates
	60	Explain recuperates

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