Discipline:Metallurgical Engineering		Semester: 5th Semester	NameoftheTeachingFaculty: Subrat Ku. Behera , Lecturer
Subject: : HEAT TRANSFER, FLUID FLOW & FURNACES (TH-02)		Noofdays /Weekclass allotted:04	Semester: 01.10.2021 to 08.01.2022 No. Of weeks:16
Month	week	ClassDay	Theory topics
oct	1st	1st	Discuss types of fluids (ideal and real). ii) Discuss the type of flow (stream line & turbulent).
		2nd	Discuss types of fluids (ideal and real). ii) Discuss the type of flow (stream line & turbulent).
		3rd	Discuss types of fluids
		4th	Discuss types of fluids
	3rd	1st	Discuss types of fluids
		2nd	Properties of fluid
			Properties of fluid
			Properties of fluid
	4th	1st	Properties of fluid
		2nd	Properties of fluid
		3rd	Properties of fluid
		4th	Properties of fluid
	5TH	1st	State and explain Bernoulli"s equation
		2nd	State and explain Bernoulli"s equation
		3rd	State and explain Bernoulli"s equation
		4th	orifices, Pitot tube and venturies
NOV	1st	1st	orifices, Pitot tube and venturies
		2nd	orifices, Pitot tube and venturies
		3rd	orifices, Pitot tube and venturies
		4th	orifices, Pitot tube and venturies
	2nd	1st	orifices, Pitot tube and venturies
		2nd	Define and calculate loss of head (friction loss) in straight pipes,
		3rd	Define and calculate loss of head (friction loss) in straight pipes,
		4th	Define and calculate loss of head (friction loss) in straight pipes,
	3rd	1st	Define and calculate loss of head (friction loss) in straight pipes,
		2nd	Define and calculate loss of head (friction loss) in straight pipes,
		3rd	Define and calculate loss of head (friction loss) in straight pipes,
		4th	Define and calculate loss of head (friction loss) in straight pipes,
	4th	1st	Discuss the elementary idea on different modes of heat transfer.
		2nd	Discuss the elementary idea on different modes of heat transfer.
		3rd	Discuss the elementary idea on different modes of heat transfer.
		4th	Define and derive the Fourier"s law
DEC	1st	1st	Define and derive the Fourier"s law
		2nd	Define and derive the Fourier"s law
	2nd	1st	Explain & calculate the steady state heat conduction through flat
		2nd	Explain & calculate the steady state heat conduction through flat
		3rd	Explain & calculate the steady state heat conduction through flat walls
		4th	Define Convection
	3rd	1st	Define Convection
		2nd	Define Convection
		3rd	Define and differentiate between natural and forced convection
		4th	Define and differentiate between natural and forced convection
	4th	1st	Define and differentiate between natural and forced convection
		2nd	State the natural and forced heat transfer co-efficient (equation

		3rd	State the natural and forced heat transfer co-efficient (equation only, no derivation
		4th	State the natural and forced heat transfer co-efficient (equation only, no derivation
JAN	5TH	1st	Define radiations
		2nd	Define radiations
		3rd	Define radiations
		4th	State the Stefan Boltzmann‟s Law
	1st	1st	State the Stefan Boltzmann‟s Law
		2nd	Define emissivity of black bodies and grey bodies
		3rd	Define emissivity of black bodies and grey bodies
		4th	Define emissivity of black bodies and grey bodies
	2nd	1st	Classify the furnaces based on use, heat source and material
		2nd	Classify the furnaces based on use, heat source and material
		3rd	Classify the furnaces based on use, heat source and material movements.
		4th	Discuss the following metallurgical furnaces (a) soaking pits, (b) reheating furnace (c) heat treatment furnace (d) melting (e)
	3rd	1st	Discuss the following metallurgical furnaces (a) soaking pits, (b) reheating furnace (c) heat treatment furnace (d) melting (e)
		2nd	Discuss the following metallurgical furnaces (a) soaking pits, (b)
		3rd	State the principles of heat generation in electric furnaces such as arc, resistance and induction (core less)
		4th	State the principles of heat generation in electric furnaces such as arc, resistance and induction (core less)