(4th SEMESTER FOOD TECHNOLOGY)

DISCIPLINE:FT	SEMESTER:4th	NAMEOFTHETEACHINGFACULTY:MS. Sriya suman Patro
SUBJECT:Fluid Mechanics and Heat Transfer	NO. OF DAYS/ PER WEEK CLASS ALLOTTED:4	SEMESTERFROMDATE:10.03.2022 TO 30.06.2022 NO.OFWEEKS:15
WEEK	CLASSDAY	THEORY/PRACTICALTOPICS
1ST	1ST 2ND 3RD 4TH	Classify fluid, Properties of fluid, Newton"s Law of viscosity
2ND	1ST 2ND 3RD 4TH	Differentiate Newtonian & Non-Newtonian fluid, Derive an equation of pressure head
3RD	1ST 2ND 3RD 4TH	**FLUID FLOW PHENOMENA AND FLUIDISATION** Types of flow, Reynolds"s experiment, Mechanism of fluid flow in pipes
4TH	1ST 2ND 3RD 4TH	Derived Bernoulli"s theorem, Friction factor and estimate friction loss in pipes
5TH	1ST 2ND 3RD 4TH	Fluidization, Pressure drop equation in fluidised bed, Fluid flow characteristic in packed bed
6TH	1ST 2ND 3RD 4TH	**FLOW MEASUREMENT AND TRANSPORTATION OF FLUID:** Flow measurement and Transportation of fluid, Fluid flow through orifice meter, venturi meter and derive an expression for flow, measurement, solve simple problems on it.
7TH	1ST 2ND 3RD 4TH	Construction and working of rotameter Differentiate pipe and tube Standard pipe fittings
8TH	1ST 2ND 3RD 4TH	Construction and operation of different types of valves, Classify pumps, Construction and operation of centrifugal pump
9TH	1ST 2ND 3RD 4TH	**CONDUCTION** Heat low concept in conduction Steady state and unsteady state conduction Fourier"s law of conduction
10TH	1ST 2ND 3RD 4TH	Derive an equation of hear flow in a composite wall and a cylinder ,Optimum thickness of insulation, Solve problems on conduction.

11TH	1ST 2ND 3RD 4TH	Optimum thickness of insulation, Solve problems on conduction.
12TH	1ST 2ND 3RD 4TH	CONVECTION Classify convection Heat flow phenomenon in convection Derive equation of individual and overall heat transfer co-efficient
13TH	1ST 2ND 3RD 4TH	Different dimensionless no., used in convection and discuss different empirical equation on heat flow by convection. Parallel, co-current and counter current flow. Log mean temperature difference.
14TH	1ST 2ND 3RD 4TH	HEAT EXCHANGERS AND EVAPORATORS Classify heat exchanger. Construction and working of single pass, and multipass, shell and tube heatexchangers.
15TH	1ST 2ND 3RD 4TH	Energy balance for shell and tube heat exchanger and solve problems. Classify evaporator Construction and operation of different types of evaporators Solve simple material balance and energy balance problems

Sriyasuman Patra
Asst. F.T.

9.3.22
H.O.D (F.T)