LESSION PLAN
Session- 2023-24 (S)

Discipline: Mechanical Engineering	Semester:4TH	Name of the Teaching Faculty: Mihir Kumar Swain
Subject: Fluid Mechanics (TH 3)	No. Of Days/ Per week Class Allotted: 04	Semester From Date: 16/01/24 to 26/04/24 No. Of weeks: 15

Week	Class Day	Topic to be taught (Theory)
1st	1	Define fluid, Description of fluid properties like Density, Specific weight, specific gravity, specific volume
	2	Solve simple problems.
	3	Solve simple problems.
	4	Definitions and Units of Dynamic viscosity, kinematic viscosity,
2nd	5	Solve simple problems.
	6	solve simple problems
	7	surface tension ,Capillary phenomenon
	8	solve simple problems
3rd	9	Definitions and units of fluid pressure, Statement of Pascal's Law, Proof, pressure intensity and pressure head,
	10	Concept of atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure
	11	Solve simple problems
	12	Simple Manometers
4th	13	Solve simple problems
	14	Differential Manometers
	15	Solve simple problems
	16	Bourdon tube pressure gauge(Simple Numerical)
5th	17	Definition of hydrostatic pressure, force &its concept
	18	Total pressure and centre of pressure on immersed bodies(Horizontal)
	19	Total pressure and centre of pressure on immersed bodies(Vertical Bodies)
	20	Solve Simple problems
	21	Solve Simple problems
6th	22	Solve Simple problems
	23	Archimedes 'principle, concept of buoyancy, meta center and meta centric

			height(Definition only)
	24		Concept of floatation
7th	25		Meaning of Kinematics of Flow , Types of fluid flow
	26		Continuity equation(Statement and proof for one dimensional flow)
	27		4.3 Bernoulli's theorem(Statement and proof)
	28		Applications and limitations of Bernoulli's theorem to (Venturimeter)
8th	29		Applications and limitations of Bernoulli's theorem to (pitot tube)
	30		Solve simple problems
	31		Solve simple problems
	32		Solve simple problems
9th	33		Define orifice, notches & weirs
	34		Flow through orifice, Orifices coefficient & the relation between the orifice coefficient
	35		Solve simple problems
	36		Classifications of notches & weirs
10th	37		Discharge over a rectangular notch or weir
	38		Discharge over a triangular notch or weir
	39		Simple problems on above
	40		Simple problems on above
11th	41		Definition of pipe. Loss of energy in pipes.
	42		Simple problems on above
	43		Head loss due to friction: Darcy's and Chezy's formula (Expression only)
	44		Simple problems on above
12th	45		Simple problems on above
	46		Simple problems on above
	47		Hydraulic gradient and total gradient line
	48		Simple problems on above
13th	49		Simple problems on above
	50		Simple problems on above
	51		Impact of jet on fixed vertical flat plates
	52		Simple problems on above
	53		Impact of jet on moving vertical flat plates
	54		Simple problems on above
14th	55		Derivation of work done on series of vanes and condition for maximum efficiency
	56		Simple problems on above
	57		Impact of jet on moving curved vanes
	58		Simple problems on above
15th	59		Illustration using velocity triangles, derivation of work done, efficiency.
	60		Simple problems solved

NKS 12/1/24

12/01/2024