LESSON PLAN

		Summer - 23
Discipline : MECHANICAL ENGG	Semester : 4TH	Name of the Teaching Faculty: MS PRITY ANIVA XESS
Subject: FLUID MECHANICS	No. of days/per week class allotted : 04	Semester From date: 13.02.23 To Date: 23.05.23 No. of Weeks: 15
1st	1st	**Properties of Fluid** Define fluid, Description of fluid properties like Density, Specific weight,specific gravity, specific volume
	2nd	Solving simple problems
	3rd	Definitions and Units of Dynamic viscosity, kinematic viscosity
	4th	Newton's law of Viscosity, Types of Fluids
2nd	1st	Surface tension
	2nd	Deriving S.T. for liquid droplet, hollow bubble and jet
	3rd	Capillary phenomenon
	4th	Deriving capillary rise and capillary depression
3rd	1st	**Fluid Pressure and its measurements** Definitions and units of fluid pressure, pressure intensity and pressure head.
	2nd	Statement of Pascal's Law and its derivation
	3rd	Solving problems on pressure, pressure head and conversion of units
	4th	Concept of atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure and their graphical representation
4th	1st	Pressure measuring instruments, Piezometer, Simple U-tube manometer
	2nd	Differential U-tube manometer and solving problems on it
	3rd	Inverted Differential U-tube manometer and solving problems on it
	4th	Bourdon tube pressure gauge
5th	1st	**Hydrostatics** Definition of hydrostatic pressure, Total pressure and centre of pressure
	2nd	Derivation of Total pressure and centre of pressure on immersed bodies of Vertical flat plate
	3rd	Solving Simple problems on immerged vertical rectangular, circular andtriangular flat plates.
	4th	Solving Simple problems on immerged horizontal rectangular, circular and triangular flat plates.
6th	1st	Archimedes principle, concept of buoyancy, Center of Buoyancy
	2nd	Solving problems on buoyancy and center of Buoyancy
	3rd	Meta center and meta centric height
	4th	Concept of floatation
7th	1st	**Kinematics of Flow:** Types of fluid flow: Steady & unsteady flow, Uniform & Non-uniform flow,Laminar & Turbulent flow, Compressible & Incompressible flow
	2nd	Continuity equation(Statement and proof for one dimensional flow)
	3rd	Solving problems on Continuity equation
	4th	Bernoulli's theorem (Statement and proof)
8th	1st	Solving problems on Bernoulli's theorem (Statement and proof)
	2nd	Applications of Bernoulli's theorem (Venturimeter, pitot tube)

	3rd	Solving simple problems on Bernoulli's theorem
	4th	Limitations of Bernoulli's theorem
9th	1st	**Orifices, notches & weirs** Define orifice. Flow through orifice
	2nd	Orifices coefficient & the relation between the orifice coefficients
	3rd	Classifications of notches & weirs
	4th	Discharge over a rectangular notch or weir
10th	1st	Solving problems on rectangular notch or weir
	2nd	Discharge over a triangular notch or weir
	3rd	Solving problems on triangular notch or weir
	4th	Solving problems on triangular notch or weir
11th	1st	**Flow through pipe:** Definition of pipe, Classification of losses of energy in pipe (Major & Minor losses)
	2nd	Head loss due to friction: Darcy's and Chezy's formula (Expression only)
	3rd	Solving Problems using Darcy's and Chezy's formula.
	4th	Solving Problems using Darcy's and Chezy's formula.
12th	1st	Minor energy losses types and its formulae
	2nd	Solving Problems on it
	3rd	Solving Problems on it
	4th	Hydraulic gradient line (H.G.L) and Total Energy line(T.E.L) definition and its value with graphical representation
13th	1st	Solving Problems on H.G.L & T.E.L
	2nd	Solving Problems on H.G.L & T.E.L
	3rd	**Impact of jets:** Impact of jet on fixed vertical flat plate
	4th	Impact of jet on moving vertical flat plates
14th	1st	Solving problems on flat plates
	2nd	Derivation of work done on series of vanes and condition for maximum efficiency.
	3rd	Impact of jet on fixed curved vanes
	4th	Impact of jet on moving curved vanes, its illustration using velocity triangles
15th	1st	Derivation of work done, efficiency of series of moving curved vanes
	2nd	Solving problems on curved vanes
	3rd	Solving problems on curved vanes
	4th	Remedial class
		Remedial class
		Remedial class

11/02/23
Signature of Faculty

11/02/23
Signature of HOD