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Discipline: <u>MECHANICAL</u>	Semester: <u>4th</u>	Name of the Teaching Faculty: <u>SRI SUMANTA BISWAL</u> <u>PTGF(Mechanical)</u>
Subject: <u>F.M</u>	No. of days/per week class allotted: <u>4</u>	Semester From date: <u>14/02/2023</u> To date: No of weeks: <u>15</u>
Week	Class Day	Theory Topics:
1 st	1 st	INTRODUCTION: Properties of Fluid, Define fluid
	2 nd	Description of fluid properties like Density, Specific weight, specific gravity, specific volume and solve simple problems.
	3 rd	Definitions and Units of Dynamic viscosity, kinematic viscosity, surface tension Capillary phenomenon
	4 th	Fluid Pressure and its measurements, Definitions and units of fluid pressure, pressure intensity and pressure head
2 nd	1 st	Statement of Pascal's Law. Concept of atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure
	2 nd	Pressure measuring instruments Manometers (Simple and Differential)
	3 rd	Bourdon tube pressure gauge (Simple Numerical), Solve simple problems on Manometer.
	4 th	Hydrostatics, Definition of hydrostatic pressure
3 rd	1 st	Total pressure and centre of pressure on immersed bodies (Horizontal and Vertical Bodies)
	2 nd	Archimedes' principle, concept of buoyancy, meta center and meta centric height (Definition only)
	3 rd	Concept of floatation
	4 th	Kinematics of Flow, Types of fluid flow
4 th	1 st	Continuity equation (Statement and proof for one dimensional flow)
	2 nd	Bernoulli's theorem (Statement and proof) Applications and limitations of Bernoulli's theorem (Venturimeter, pitot tube)
	3 rd	Orifices, notches & weirs, Define orifice, Flow through orifice, Orifices coefficient & the relation between the orifice coefficients, Classifications of notches & weirs
	4 th	Discharge over a rectangular notch or weir Discharge over a triangular notch or weir, Simple problems on above
5 th	1 st	Flow through pipe, Definition of pipe, Loss of energy in pipes, Head loss due to friction: Darcy's and Chezy's formula (Expression only)
	2 nd	Solve Problems using Darcy's and Chezy's formula. Hydraulic gradient

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Sumanta Biswal (PTGF)