ASIAN SCHOOL OF TECHNOLOGY

Lesson Plan

Name of Faculty- Priyaranjan pattanaik

Name of the Program	**Diploma in MechanicalEngineering**				
Course Name	**FLUID MECHANICS**			Course Code	
Course Year	**Second**	Semester	**4TH**	Academic Period	2024-2025
No. of Classes allotted per Week	4	Planned Classes Required to Complete the Course			**60**

Sl. No.	Topics to be covered	Module	No. of hours Required
1	**Properties of Fluid**: Description of fluid properties	1	2
2	Description of fluid properties and related Numericals	1	3
3	Definitions and Units of Dynamic viscosity, kinematic viscosity	1	1
4	Surface tension Capillary phenomenon	1	2
5	**Fluid Pressure and its measurements**: Definitions and units of fluid pressure, pressure intensity and pressure head.	2	1
6	Statement of Pascal's Law.	2	1
7	Concept of atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure	2	1
8	Pressure measuring instruments Manometers (Simple and Differential	2	2
9	Bourdon tube pressure gauge(Simple Numerical)	2	1
10	Numericals based on Manometer	2	2
11	**Hydrostatics** : Definition of hydrostatic pressure. Total pressure and centre of pressure on immersed bodies(Horizontal and Vertical Bodies)	3	2
12	Total pressure and centre of pressure on immersed bodies(Horizontal and Vertical Bodies)	3	2
13	Numerical related to Total pressure and centre of pressure	3	2
14	Archimedes 'principle, concept of buoyancy, meta center and meta centric height	3	1
15	Concept of floatation	3	1
16	**Kinematics of Flow** : Types of fluid flow,	4	1
17	Continuity equation(Statement and proof for one dimensional flow)	4	2
18	Bernoulli's theorem(Statement and proof)	4	1
19	Applications and limitations of Bernoulli's theorem (Venturimeter, pitot tube)	4	1
20	Numerical related to Continuity equation and Venturimeter	4	3
21	**Orifices, notches & weirs:** Definition of orifice, Flow through orifice .	5	1

22	Orifices coefficient & the relation between the orifice coefficients	5	1
23	Classifications of notches & weirs	5	2
24	Discharge over a rectangular notch or weir	5	1
25	Discharge over a triangular notch or weir	5	1
26	Numerical related to rectangular notch and triangular notch	5	2
27	**Flow through pipe:** Definition of pipe, Loss of energy in pipes.	6	2
28	Head loss due to friction: Darcy's and Chezy's formula (Expression only)	6	2
29	Numerical related to Darcy's and Chezy's formula.	6	2
30	Hydraulic gradient and total gradient line	6	4
31	**Impact of jets:** Impact of jet on fixed and moving vertical flat plates	7	3
32	Derivation of work done on series of vanes and condition for maximum efficiency.	7	3
33	Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency	7	4

Signature of the Faculty