BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

SUBJECT: FLUID MECHANICS

FACULTY: MRS SUNITA SAMAL

ACCADEMIC SESSION: 2022-23(S)

SEMESTER: 4ᵀᴴ

SEC: A

Sd-13/02/23

H O D (Mech. Engg.)

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LESSON PLAN

Discipline: Mechanical Engineering	Semester: 4ᵀᴴ /A			Name of the teaching faculty: Mrs SUNITA SAMAL
Subject: Fluid Mechanics (TH-3)	No. of Days/ per week class allotted: 04periods per week (Mon-1 period,Wed-2 periods,fri-1 period,)			Semester From Date: 14-02-2023 To Date: 23-05-2023 No. of weeks: 15 weeks
Week	Class Day	No of period available		Theory Topics
1ST (3)	15/02/23	2		**1.0 Properties of Fluid** 1.1 Define fluid 1.2 Description of fluid properties like Density, Specific weight.
	17/02/23	1		1.2 Description of fluid properties like specific gravity, specific volume.
	20/02/23	1		1.2 solve simple problems.
2ND (4)	22/02/23	2		1.3 Definitions and Units of Dynamic viscosity, kinematic viscosity, surface tension Capillary phenomenon
	24/02/23	1		**2.0 Fluid Pressure and its measurements** 2.1 Definitions and units of fluid pressure, pressure intensity and pressure head.
	27/02/23	1		2.2 Statement of Pascal's Law. . 2.3 Concept of atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure.
3RD (4)	01/03/23	2		2.4 Pressure measuring instruments Manometers (Simple and Differential).
	03/03/23	1		2.4.1 Bourdon tube pressure gauge(Simple Numerical) .
	06/03/23	1		2.5 Solve simple problems on Manometer.
4ᵀᴴ (2)	10/03/23	1		**3.0 Hydrostatics** 3.1 Definition of hydrostatic pressure

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5TH (4)	13/03/23	1	3.2 Total pressure and centre of pressure on immersed bodies(Horizontal and Vertical Bodies)
	15/03/23	2	3.3 Solve Simple problems. 3.4 Archimedes ' principle, concept of buoyancy, meta center and meta centric height (Definition only)
	17/03/23	1	3.5 Concept of floatation
6TH (4)	20/03/23	1	**Class Test-I**
	22/03/23	2	**4.0 Kinematics of Flow** 4.1 Types of fluid flow
	24/03/23	1	4.2 Continuity equation(Statement and proof for one dimensional flow)
7TH (4)	27/03/23	1	4.3 Bernoulli's theorem(Statement and proof)
	29/03/23	2	Applications and limitations of Bernoulli's theorem (Venturimeter, pitot tube)
	31/03/23	1	4.4 Solve simple problems
8TH (3)	03/04/23	1	**5.0 Orifices, notches & weirs** 5.1 Define orifice 5.2 Flow through orifice
	05/04/23	2	5.3Orifices coefficient & the relation between the orifice coefficients 5.4 Classifications of notches & weirs
	10/04/23	1	5.5 Discharge over a rectangular notch or weir
9TH (3)	12/04/23	2	5.6 Discharge over a triangular notch or weir 5.7 Simple problems on above

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10TH(4)	17/04/23	1	**6.0 Flow through pipe** 6.1 Definition of pipe.
	19/04/23	2	6.2 Loss of energy in pipes. 6.3 Head loss due to friction: Darcy's and Chezy's formula (Expression only)
	21/04/23	1	6.4 Solve Problems using Darcy's and Chezy's formula.
11TH(4)	24/04/23	1	6.5 Hydraulic gradient and total gradient line
	26/04/23	2	6.5 Hydraulic gradient and total gradient line
	28/04/23	1	**7.0 Impact of jets** 7.1 Impact of jet on fixed and moving vertical flat plates
12TH(3)	01/05/23	1	Internal assessment
	03/05/23	2	7.2 Derivation of work done on series of vanes and condition for maximum efficiency.
	08/05/23	1	7.2 Derivation of work done on series of vanes and condition for maximum efficiency.
13TH(4)	10/05/23	2	7.3 Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency.
	12/05/23	1	7.3 Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency.
	15/05/23	1	**Internal Assessment-II / Class Test – II**
14TH(3)	17/05/23	2	Revision.
15TH (1)	22/05/23	1	Revision.
			Previous year question discussion.