LESSON PLAN

SESSION	SUMMER 2023
SEMESTER	4TH
BRANCH	MECHANICAL ENGINEERING
SECTION	A&B
THEORY NO.	3
SUBJECT	FLUID MECHANICS
LECTURER	ER. S. K. SAHOO & Er SUMIT SAHU

SL NO.	MONTH	CHAPTER NO.	DATE	TOPICS TO BE COVERED	NO. OF ACADEMIC DAYS AVAILABLE FOR THE SUBJECT	% COVERED
1	FEB	1	23.2.23	1.1 Define fluid	5	9%
			24.2.23	1.2 Description of fluid properties like Density, Specific weight, specific gravity, specific volume		
			25.2.23	solve simple problems		
			27.2.23	solve simple problems		
			28.2.23	1.3 Definitions and Units of Dynamic viscosity, kinematic viscosity		
2	MARCH	2	1.3.23	surface tension Capillary phenomenon	24	43%
			2.3.23	2.1 Definitions and units of fluid pressure, pressure intensity and pressure head.		
			3.3.23	2.2 Statement of Pascal's Law.		
			4.3.23	2.3 Concept of atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure		
			6.3.23	2.4 Pressure measuring instruments Manometers (Simple		
			9.3.23	Differential Manometers		
			10.3.23	2.4.1 Bourdon tube pressure gauge(Simple Numerical)		
			11.3.23	2.4.1 Bourdon tube pressure gauge(Simple Numerical)		
			13.3.23	2.5 Solve simple problems on Manometer.		
			14.3.23	2.5 Solve simple problems on Manometer.		
			15.3.23	2.5 Solve simple problems on Manometer.		
		3	16.3.23	3.1 Definition of hydrostatic pressure		
			17.3.23	3.2 Total pressure and centre of pressure on immersed bodies(Horizontal and Vertical Bodies)		
			18.3.23	3.3 Solve Simple problems.		
			20.3.23	3.3 Solve Simple problems.		
			21.3.23	3.4 Archimedes 'principle, concept of buoyancy		
			22.3.23	meta center and meta centric height (Definition only)		
			23.3.23	3.5 Concept of floatation		

			24.3.23	4.1 Types of fluid flow		
			25.3.23	4.2 Continuity equation(Statement and proof for one dimensional flow)		
			27.3.23	4.2 Continuity equation(Statement and proof for one dimensional flow)		
		4	28.3.23	4.3 Bernoulli's theorem(Statement and proof)		
			29.3.23	4.3 Bernoulli's theorem(Statement and proof)		
			31.3.23	Applications and limitations of Bernoulli's theorem (Venturimeter, pitot tube)		
3	APRIL		3.4.23	4.4 Solve simple problems	15	27%
			4.4.23	4.4 Solve simple problems		
			5.4.23	4.4 Solve simple problems		
		5	6.4.23	5.1 Define orifice 5.2 Flow through orifice		
			8.4.23	5.3 Orifices coefficient & the relation between the orifice coefficients		
			10.4.23	5.3 Orifices coefficient & the relation between the orifice coefficients		
			11.4.23	5.4 Classifications of notches & weirs		
			12.4.23	5.5 Discharge over a rectangular notch or weir		
			13.4.23	5.6 Discharge over a triangular notch or weir		
			24.4.23	5.7 Simple problems on above		
			25.4.23	5.7 Simple problems on above		
			26.4.23	5.7 Simple problems on above		
			27.4.23	5.7 Simple problems on above		
		6	28.4.23	6.1 Definition of pipe.		
			29.4.23	6.2 Loss of energy in pipes.		
5	MAY		1.5.23	6.3 Head loss due to friction: Darcy's and Chezy's formula (Expression only)	11	21%
			2.5.23	6.3 Head loss due to friction: Darcy's and Chezy's formula (Expression only)		
			3.5.23	6.4 Solve Problems using Darcy's and Chezy's formula.		
			4.5.23	6.4 Solve Problems using Darcy's and Chezy's formula.		
			6.5.23	6.5 Hydraulic gradient and total gradient line		
		7	8.5.23	7.1 Impact of jet on fixed and moving vertical flat plates		
			9.5.23	7.2 Derivation of work done on series of vanes and condition for maximum efficiency.		
			10.5.23	7.2 Derivation of work done on series of vanes and condition for maximum efficiency.		
			11.5.23	7.3 Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency.		
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BRIEF SUMMARY OF THE PLAN

SL. NO.	MONTH	UNIT/CHAPTER TO BE COVERED	% COVERAGE
1	Feb-23	CH-1	9%
2	Mar-23	CH-2,CH-3.CH-4.3	43%
3	Apr-23	CH-4,CH-5,CH-6.2	27%
4	May-23	CH-6,CH-7	21%

21.02.23
SIGNATURE OF FACULTY

21-02-23

21.2.22
SIGNATURE OF HOD

21/2/23
SIGNATURE OF PRINCIPAL