

IDEAL SCHOOL OF ENGG. BBSR, KHURDHA
LESSON PLAN
4th SEMESTER MECHANICAL ENGINEERING (2022-23)
SUBJECT- FLUID MECHANICS

TOTAL PERIOD-60
THEORY-4P/WEEK

NAME OF FACULTY: Er.Sangram Keshari Padhi(Lect. In mech)

SI No.	week	Day	Topics to be covered
1	1 st	1 st day	Define fluid
		2 nd day	Description of fluid properties like Density, Specific weight
		3 rd day	Specific gravity, specific volume
		4 th day	Solve simple problems
SI No.	week	Day	Topics to be covered
2	2 nd	1 st day	Definitions and Units of Dynamic viscosity,
		2 nd day	Definitions and Units of kinematic viscosity
		3 rd day	Surface tension Capillary phenomenon
		4 th day	Solve simple problems
SI No.	week	Day	Topics to be covered
3	3 rd	1 st day	Definitions and units of fluid pressure,
		2 nd day	What is pressure intensity and pressure head ?
		3 rd day	Statement of Pascal's Law.
		4 th day	Concept of atmospheric pressure, gauge pressure, vacuum and absolute pressure
SI No.	week	Day	Topics to be covered
4	4 th	1 st day	What is Pressure measuring instruments Manometers (Simple)
		2 nd day	What is Pressure measuring instruments Manometers (Differential)
		3 rd day	Bourdon tube pressure gauge(Simple Numerical)
		4 th day	Solve simple problems on Manometer.
SI No.	week	Day	Topics to be covered
5	5 th	1 st day	Definition of hydrostatic pressure
		2 nd day	Total pressure and centre of pressure on immersed bodies(Horizontal Bodies)
		3 rd day	Total pressure and centre of pressure on immersed bodies (Vertical Bodies)
		4 th day	Solve Simple problems
SI No.	week	Day	Topics to be covered
6	6 th	1 st day	What is Archimedes principle?
		2 nd day	What is concept of buoyancy? (Definition only)
		3 rd day	Meta center and meta centric height (Definition only)
		4 th day	Concept of floatation
SI No.	week	Day	Topics to be covered

7	7 th	1 st day	What is fluid flow? Types of fluid flow
		2 nd day	What is Continuity equation?
		3 rd day	Continuity equation (Statement and proof for one dimensional flow)
		4 th day	What is Bernoulli's theorem (Statement and proof)
Sl No.	week	Day	Topics to be covered
8	8 th	1 st day	What is Venturimeter, pitot tube
		2 nd day	Applications and limitations of Bernoulli's theorem
		3 rd day	Solve simple problems
		4 th day	Solve simple problems
Sl No.	week	Day	Topics to be covered
9	9 th	1 st day	Define orifice
		2 nd day	Flow through orifice
		3 rd day	Orifices coefficient & the relation between the orifice coefficients
		4 th day	Classifications of notches & weirs
Sl No.	week	Day	Topics to be covered
10	10 th	1 st day	Discharge over a rectangular notch or weir
		2 nd day	Discharge over a triangular notch or weir
		3 rd day	Simple problems on above
		4 th day	Simple problems on above
Sl No.	week	Day	Topics to be covered
11	11 th	1 st day	Definition of pipe.
		2 nd day	Loss of energy in pipes.
		3 rd day	Energy loss through pipe due to friction
		4 th day	What is Head loss due to friction?
Sl No.	week	Day	Topics to be covered
12	12 th	1 st day	Head loss due to friction: Darcy's and Chezy's formula (Expression only)
		2 nd day	Head loss due to friction: Chezy's formula (Expression only)
		3 rd day	Solve Problems using Darcy's and Chezy's formula.
		4 th day	Solve Problems using Darcy's and Chezy's formula.
Sl No.	week	Day	Topics to be covered
13	13 th	1 st day	What is Hydraulic gradient?
		2 nd day	What is total gradient line?
		3 rd day	What is jet?
		4 th day	What is Impact of jet on fixed flat plates?
Sl No.	week	Day	Topics to be covered
14	14 th	1 st day	What is Impact of jet on moving vertical flat plates?
		2 nd day	Derivation of work done on series of vanes and condition for maximum efficiency.
		3 rd day	Derivation of work done on series of vanes and condition for maximum efficiency.
		4 th day	Numerical Problem solving
Sl No.	week	Day	Topics to be covered
15	15 th	1 st day	Numerical Problem solving
		2 nd day	Impact of jet on moving curved vanes,
		3 rd day	Illustration using velocity triangles,
		4 th day	Derivation of work done, efficiency of jet

