GOVERNMENT POLYTECHNIC, MALKANGIRI
DEPARTMENT OF MECHANICAL ENGINEERING

Discipline:- MECHANICAL ENGG. ENGG.	Semester:- 4TH	Name of Teaching Faculty:- Sri SAURAV RANJAN PRADHAN, WORKSHOP SUPERINTENDENT
SUB:-Fluid Mechanics	No of Days /per week class allotted:-04	Semester From Date:-14.02.23 To Date:-23.05.23 No of Weeks-15
PRE-REQUISITE	Basic knowledge about Engineering physics.	
COURSE OUTCOMES	CO1:- Comprehending fluid properties and their measurements. CO2:- Realizing conditions for floatation. CO3:- Applying Bernoulli's theorem.	

WEEK	CLASS DAY	THEORY/PRACTICAL TOPICS	DELIVERY METHOD
1st	1st	Introduction about fluid mechanics, define fluid	Whiteboard
	2nd	Description of fluid properties:- Density, Specific weight	Whiteboard
	3rd	Description of fluid properties:- specific gravity, specific volume	Whiteboard, Lecture notes
	4th	Problem solving	Whiteboard
2nd	1st	Definitions and Units of Dynamic viscosity, kinematic viscosity	Whiteboard
	2nd	Define surface tension	PPT
	3rd	Define Capillary phenomenon	Whiteboard, Lecture notes
	4th	**REVISION CH-1/QUIZ & ASSIGNMENT-1**	Whiteboard
3rd	1st	Definitions and units of fluid pressure, pressure intensity and pressure head, Statement of Pascal's Law.	Whiteboard
	2nd	Concept of atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure	Whiteboard, Lecture notes
	3rd	Describe about Pressure measuring instruments, Simple Manometers	PPT
	4th	Problem solving	Whiteboard
4th	1st	Differential Manometers	Whiteboard
	2nd	Problem solving	Whiteboard
	3rd	Bourdon tube pressure gauge,Problem solving	Whiteboard, Lecture notes
	4th	**REVISION CH-2/QUIZ & ASSIGNMENT-2**	Whiteboard
5th	1st	Definition of hydrostatic pressure, Total pressure and centre of pressure	Whiteboard
	2nd	Vertical plane surface submerged in liquid	Whiteboard, Lecture notes

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	3rd	Problem solving	Whiteboard
	4th	Horizontal plane surface submerged in liquid	Whiteboard, Lecture notes
6th	1st	Problem solving	Whiteboard
	2nd	Archimedes 'principle, concept of buoyancy	PPT
	3rd	Definition Metacentre, Definition metacentric height, Concept of floatation	Whiteboard, Lecture notes
	4th	**REVISION CH-3/QUIZ & ASSIGNMENT-3**	Whiteboard
7th	1st	Types of fluid flow	Whiteboard
	2nd	Continuity equation(Statement and proof for one dimensional flow)	Whiteboard, Lecture notes
	3rd	Bernoulli's theorem(Statement and proof)	Whiteboard, Lecture notes
	4th	Venturimeter	PPT
8th	1st	Problem solving	Whiteboard
	2nd	Pitot tube	Whiteboard, Lecture notes
	3rd	Problem solving	Whiteboard
	4th	**REVISION CH-4/QUIZ & ASSIGNMENT-4**	Whiteboard
9th	1st	Define orifice, Flow through an orifice	Whiteboard
	2nd	Orifices coefficient & the relation between the orifice coefficients	Whiteboard, Lecture notes
	3rd	Classifications of notches & weirs	PPT
	4th	Discharge over a rectangular notch or weir	Whiteboard, Lecture notes
10th	1st	Problem solving	Whiteboard
	2nd	Discharge over a triangular notch or weir	Whiteboard, Lecture notes
	3rd	Problem solving	Whiteboard
	4th	**REVISION CH-5/QUIZ & ASSIGNMENT-5**	Whiteboard
11th	1st	Definition of pipe, Loss of energy in pipes	PPT
	2nd	Head loss due to friction: Darcy's formula (Expression only)	Whiteboard, Lecture notes
	3rd	Head loss due to friction: Chezy's formula (Expression only)	Whiteboard, Lecture notes
	4th	Problems solving using Darcy's & Chezy's formula	Whiteboard
12th	1st	Problems solving using Darcy's & Chezy's formula	Whiteboard
	2nd	Problems solving using Darcy's & Chezy's formula	Whiteboard
	3rd	Problems solving using Darcy's & Chezy's formula	Whiteboard
	4th	Problems solving using Darcy's & Chezy's formula	Whiteboard

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13th	1st	Hydraulic gradient and total energy line	Whiteboard, Lecture notes
	2nd	**REVISION CH-6/QUIZ & ASSIGNMENT-6**	Whiteboard
	3rd	Impact of jet on fixed vertical flat plates	Whiteboard
	4th	Impact of jet on moving vertical flat plates	Whiteboard, Lecture notes
14th	1st	Derivation of work done on series of vanes	Whiteboard
	2nd	Condition for maximum efficiency	Whiteboard
	3rd	Impact of jet on moving curved vanes	Whiteboard
	4th	Illustration using velocity triangles	PPT
15th	1st	Illustration using velocity triangles	Whiteboard, Lecture notes
	2nd	Derivation of work done	Whiteboard
	3rd	Efficiency	Whiteboard, Lecture notes
	4th	**REVISION CH-7/QUIZ & ASSIGNMENT-7**	Lecture notes

LEARNING RESOURCES-

01:- Text Book of Fluid Mechanics,R.K.Bansal
01:- Text Book of Fluid Mechanics,R.S khurmi
01:- Text Book of Fluid Mechanics, R.K.Rajput
01:- Text Book of Fluid Mechanics, Modi & Seth

WEBSITE RESOURCES-

01:- www.youtube.com

08/02/23 08/02/23

Sign. of Faculty concerned **Sign. of HOD** **Sign. of Academic Co-ordinator**

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