

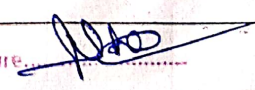
4th Semester  
Summer - 2024

Sub: Fluid Mechanics

AJAYA KUMAR SAHOO


Discipline	Semester	Name of the teaching faculty
Mechanical	4th	AJAYA KUMAR SAHOO
Subject	No. of Days/ per week class	Semester From 16-01-24 to 26-04-24
Fluid mechanics	04	No. of weeks

Week	Class Day	Theory TOPICS
	1st	X
	2nd	Defination of Fluid
1st	3rd	X
	4th	Description of fluid properties, Denseth
	5th	X
	6th	specific weight, specific gravity
	1st	Specific volume and simple problem
	2nd	Defination and Units of Dynamic Viscosity
2nd	3rd	X
	4th	Kinematic Viscosity
	5th	X
	6th	X
	1st	Surface tension, Capillary phenomenon
	2nd	Definations and Unit of Fluid pressure
3rd	3rd	X
	4th	Defination of pressure intensity and pressure head
	5th	X
	6th	Statement of Pascal's Law

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	1st	Concept of atmospheric pressure, gauge pressure
	2nd	vacuum pressure and absolute pressure
4th	3rd	x
	4th	pressure measuring instrument (simple manometer)
	5th	x
	6th	Differential manometers
	1st	Bourdon tube pressure gauge
	2nd	simple problems on manometer
5th	3rd	x
	4th	Definition of hydrostatic pressure
	5th	x
	6th	Total pressure and centre pressure on horizontal immersed bodies
	1st	vertical immersed bodies
	2nd	Sample problems on Total pressure and centre pressure
6th	3rd	Archimedes principle
	4th	x
	5th	x
	6th	x
	1st	x
	2nd	Concept of buoyancy
7th	3rd	meta centre and meta centric height
	4th	Concept of floatation
	5th	x
	6th	x

	1st	Types of Floating
	2nd	Continuity equation (statement and proof)
8th	3rd	Bernoulli's Theorem (statement and proof)
	4th	x
	5th	x
	6th	x
	1st	Application of Bernoulli's Theorem
	2nd	Application of Bernoulli's Theorem (Venturimeter)
9th	3rd	Limitation of Bernoulli's Theorem (Pitot tube)
	4th	x
	5th	Sample problems on venturimeter,
	6th	pitot tube
	1st	Defination of orifice
	2nd	Flow through orifice
10th	3rd	Orifice coefficient and relation between $C_c$ , $C_v$ and $C_d$
	4th	x
	5th	x
	6th	x
	1st	Classification of notches and weirs
	2nd	Discharge over a rectangular notch and weir
11th	3rd	Discharge over a triangular notch and weir.
	4th	Sample problems on above.
	5th	x
	6th	x

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1st Definition of pipe  
 2nd Loss of energy in pipes  
 12th 3rd Head loss due to friction (Darcy's Formula)  
 4th Head loss due to friction (Chezy's Formula)  
 5th X  
 6th X

1st simple problems on Darcy's formula  
 2nd simple problems on Chezy's formula  
 13th 3rd Hydraulic gradient and total gradient line  
 4th Impact of jet on fixed flat plate.  
 5th X  
 6th X

1st Impact of jet on vertical flat plate  
 2nd Derivation of work done on series of vane  
 14th 3rd Condition for maximum efficiency.  
 4th X  
 5th X  
 6th X

1st Impact of jet on moving curved vane  
 2nd velocity triangles derivation of work done  
 15th 3rd efficiency  
 4th simple problems on above  
 5th X  
 6th X

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