

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF
ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN
Session-2023-2024

Discipline: Mechanical Engg. Semester: 4th

Subject: Fluid Mechanics

Name of the Teaching Faculty: Vijayash Bargha

Subject: FM No. of Days/per week class allotted : 04

Semester From Date : 16-01-2024 To Date : 26-04-2024 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
01	01	Introduction to Properties of Fluid.
	02	Define Fluid
	03	Description of properties of fluid.
	04	Solve simple numerical.
02	01	Definition and units of Dynamic viscosity,
	02	Kinematic viscosity
	03	Surface tension
	04	Capillary phenomenon.
03	01	Introduction to fluid pressure and its measurements.
	02	Definitions and units of fluid pressure, pressure intensity and pressure head.
	03	Statement of Pascal's law.
	04	Atmospheric pressure, gauge pressure


Signature of the Faculty

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Semester From Date : 16-01-2024 To Date : 26-04-2024 No. of Weeks : 15

Week	Class Day	Theory / Practical Topics
04	01	Vacuum pressure, absolute pressure
	02	Manometers (Simple and Differential)
	03	Bourdon tube pressure gauge
	04	Solve simple numericals.
05	01	Introduction to Hydrostatics
	02	Defination of hydrostatic pressure.
	03	Total pressure and ^{Centre of} Horizontal pressure on Horizontal bodies
	04	Total pressure and centre of pressure on vertical bodies.
06	01	Solve simple numericals.
	02	Archimedis principle ; concept of buoyancy.
	03	metacentre and metacentric height.
	04	Concept of floating condition.


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Week	Class Day	Theory /Practical Topics
07	01	Introduction to kinematics of flow.
	02	Types of fluid flow.
	03	Continuity equation
	04	continuity equation for one dimensional flow.
08	01	Statement of Bernoulli's equation
	02	proof of Bernoulli's equation.
	03	Venturimeter
	04	Pitot tube, simple numerical.
09	01	Introduction to orifices, notches and weirs
	02	Define orifice
	03	Flow through orifice.
	04	Orifices coefficient


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Week	Class Day	Theory /Practical Topics
10	01	Relation between the orifice coefficients
	02	Classifications of notches and weirs
	03	Discharge over a rectangular notch or weir
	04	Discharge over a triangular notch or weir
11	01	Simple problems
	02	Simple problems
	03	Introduction to Flow through pipe
	04	Definition of pipe
12	01	Loss of energy in pipes
	02	Head loss due to friction
	03	Darcy's Formula
	04	Cherzy's Formula


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Week	Class Day	Theory /Practical Topics
13	01	Solve problems
	02	Solve problems
	03	Hydraulic gradient
	04	Total gradient line.
14	01	Introduction to Impact of jets
	02	Impact of jet on fixed plates
	03	Impact of jet on moving vertical flat plates
	04	Derivation of workdone on series of vanes
15	01	condition for maximum efficiency.
	02	Impact of jet on moving curved vanes
	03	illustration using velocity triangles,
	04	Derivation of workdone, efficiency.


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