



GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR
SESSION PLAN
4TH SEMESTER, BRANCH-MECHANICAL(GROUP 1)
TH -3 FLUID MECHANICS

Name of the Faculty – PROF. LAKSHMI NARAYANA PANDA						
Topics to be taken						
SL NO & CHAPTER	No. of Periods assigned by SCTE & VT	Details of the topics	PLANNED DATE	Details of the topics	ACTUAL DATE	Remarks
1. Properties of Fluid	8	1.1 Define fluid 1.2 Description of fluid properties like Density, Specific weight, specific gravity, specific volume and solve simple problems. 1.3 Definitions and Units of Dynamic viscosity, kinematic viscosity, surface tension Capillary phenomenon	14/02/2023 TO 24/02/2023	1.1 Define fluid 1.2 Description of fluid properties like Density, Specific weight, specific gravity, specific volume and solve simple problems. 1.3 Definitions and Units of Dynamic viscosity, kinematic viscosity, surface tension Capillary phenomenon	14.02.2023 15.02.2023 17.02.2023 21.02.2023 22.02.2023 24.02.2023	

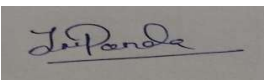
<p>2. Fluid Pressure and its measurements</p>	<p>8</p>	<p>2.1 Definitions and units of fluid pressure, pressure intensity and pressure head. 2.2 Statement of Pascal’s Law. 2.3 Concept of atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure 2.4 Pressure measuring instruments Manometers (Simple and Differential) 2.4.1 Bourdon tube pressure gauge(Simple Numerical) 2.5 Solve simple problems on Manometer.</p>	<p>25/02/2023 TO 14/03/2023</p>	<p>2.1 Definitions and units of fluid pressure, pressure intensity and pressure head. 2.2 Statement of Pascal’s Law. 2.3 Concept of atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure 2.4 Pressure measuring instruments Manometers (Simple and Differential) 2.4.1 Bourdon tube pressure gauge(Simple Numerical) 2.5 Solve simple problems on Manometer.</p>	<p>25.02.2023 28.02.2023 1.03.2023 3.03.2023 4.03.2023 10.03.2023 11.03.2023 14.03.2023</p>	
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3. Hydrostatics	8	<p>3.1 Definition of hydrostatic pressure</p> <p>3.2 Total pressure and centre of pressure on immersed bodies(Horizontal and Vertical Bodies)</p> <p>3.3 Solve Simple problems.</p> <p>3.4 Archimedes 'principle, concept of buoyancy, meta center and meta centric height (Definition only)</p> <p>3.5 Concept of floatation</p>	<p>15/03/2023 TO 24/03/2023</p>	<p>3.1 Definition of hydrostatic pressure</p> <p>3.2 Total pressure and centre of pressure on immersed bodies(Horizontal and Vertical Bodies)</p> <p>3.3 Solve Simple problems.</p> <p>3.4 Archimedes 'principle, concept of buoyancy, meta center and meta centric height (Definition only)</p> <p>3.5 Concept of floatation</p>	<p>15.03.2023</p> <p>17.03.2023 18.03.2023</p> <p>21.03.2023 22.03.2023</p> <p>24.03.2023</p>	
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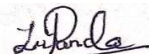
4. Kinematics of Flow	8	4.1 Types of fluid flow 4.2 Continuity equation(Statement and proof for one dimensional flow) 4.3 Bernoulli's theorem(Statement and proof) Applications and limitations of Bernoulli's theorem (Venturimeter, pitot tube) 4.4 Solve simple problems	25/03/2023 TO 5/04/2023	4.1 Types of fluid flow 4.2 Continuity equation(Statement and proof for one dimensional flow) 4.3 Bernoulli's theorem(Statement and proof) Applications and limitations of Bernoulli's theorem (Venturimeter, pitot tube) 4.4 Solve simple problems	25.03.2023 28.03.2023 29.03.2023 31.03.2023 4.04.2023 5.04.2023	
5. Orifices, notches & weirs	8	5.1 Define orifice 5.2 Flow through orifice 5.3 Orifices coefficient & the relation between the orifice coefficients 5.4 Classifications of notches & weirs 5.5 Discharge over a rectangular notch or weir 5.6 Discharge over a triangular notch or weir 5.7 Simple problems on above	8/04/2023 TO 19/04/2023	5.1 Define orifice 5.2 Flow through orifice 5.3 Orifices coefficient & the relation between the orifice coefficients 5.4 Classifications of notches & weirs 5.5 Discharge over a rectangular notch or weir 5.6 Discharge over a triangular notch or weir 5.7 Simple problems on above	8.04.2023 11.04.2023 12.04.2023 15.04.2023 18.04.2023 19.04.2023	

6. Flow through pipe	10	6.1 Definition of pipe. 6.2 Loss of energy in pipes. 6.3 Head loss due to friction: Darcy's and Chezy's formula (Expression only) 6.4 Solve Problems using Darcy's and Chezy's formula. 6.5 Hydraulic gradient and total gradient line	21/04/2023 TO 6/05/2023	6.1 Definition of pipe. 6.2 Loss of energy in pipes. 6.3 Head loss due to friction: Darcy's and Chezy's formula (Expression only) 6.4 Solve Problems using Darcy's and Chezy's formula. 6.5 Hydraulic gradient and total gradient line	21.04.2023 25.04.2023 26.04.2023 28.04.2023 29.04.2023 2.05.2023 3.05.2023 6.05.2023	
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7. Impact of jets	10	<p>7.1 Impact of jet on fixed and moving vertical flat plates</p> <p>7.2 Derivation of work done on series of vanes and condition for maximum efficiency.</p> <p>7.3 Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency.</p>	<p>9/05/2023 TO 23/05/2023</p>	<p>7.1 Impact of jet on fixed and moving vertical flat plates</p> <p>7.2 Derivation of work done on series of vanes and condition for maximum efficiency.</p> <p>7.3 Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency.</p>	<p>9.05.2023 10.05.2023</p> <p>12.05.2023 13.05.2023 16.05.2023</p> <p>17.05.2023 20.05.2023 23.05.2023</p>	
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Rakesh Tripathy

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