# LESSON PLAN.

ACADEMY SESSION - SUMMER 2024

4th SEMESTER W.E.F-16/01/2024 Total Period :- 60

Subject:- Fluid Mechanics

ABHOY MOHANTA

| SL NO | MONTH | Week | Class Day | UNIT NO/PERIOD ALLOTE | Topic to be covered as per Syllabus | Topic actually covered as per Syllabus | Short fall if any/syllabus | remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | JANUARY | 1st | 1st | 8 | Define fluid | | | |
| 2 | | | 2nd | | Define fluid | | | |
| 3 | | | 3rd | | Description of fluid properties like Density, Specific weight, specific gravity, specific & volume | | | |
| 4 | | | 4th | | solve simple problems | | | |
| 5 | | 2nd | 1st | | solve simple problems | | | |
| 6 | | | 2nd | | Definitions and Units of Dynamic viscosity, kinematic viscosity, | | | |
| 7 | | | 3rd | | surface tension Capillary phenomenon | | | |
| 8 | | | 4th | | Doubt clearing class on 1st chapter | | | |
| 9 | | 3rd | 1st | 8 | Definitions and units of fluid pressure, pressure intensity and pressure head | | | |
| 10 | | | 2nd | | Statement of Pascal's Law | | | |
| 11 | | | 3rd | | Concept of atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure | | | |
| 12 | | | 4th | | Pressure measuring instruments Manometers (simple & differential) | | | |
| 13 | | 4th | 1st | | Bourdon tube pressure gauge | | | |
| 14 | | | 2nd | | (Simple Numerical) | | | |
| 15 | | | 3rd | | Solve simple problems on Manometer | | | |
| 16 | | | 4th | | Doubt clearing class on 2nd chapter | | | |
| 17 | | 5th | 1st | 8 | Definition of hydrostatic pressure | | | |
| 18 | | | 2nd | | Total pressure and centre of pressure on immersed bodies | | | |
| 19 | | | 3rd | | (Horizontal and Vertical Bodies) | | | |
| 20 | | | 4th | | Solve Simple problems | | | |
| 21 | | 6th | 1st | | Archimedes 'principle, concept of buoyancy, meta center and meta centric height(Definition only) | | | |
| 22 | | | 2nd | | Concept of floatation | | | |
| 23 | | | 3rd | | Concept of floatation | | | |
| 24 | | | 4th | | Doubt clearing class on 3rd chapter | | | |
| 25 | FEBRUARY | | 1st | | Types of fluid flow | | | |

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| 26 | | 7th | 2nd | | Continuity equation (Statement and proof for one dimensional flow) | | | |
| 27 | | | 3rd | | Bernoulli's theorem(Statement and proof) | | | |
| 28 | | | 4th | 8 | Bernoulli's theorem(Statement and proof) | | | |
| 29 | | 8th | 1st | | Applications and limitations of Bernoulli's theorem (Venturimeter, pitot tube) | | | |
| 30 | | | 2nd | | Solve simple problems | | | |
| 31 | | | 3rd | | Solve simple problems | | | |
| 32 | | | 4th | | Doubt clearing class on 4th chapter | | | |
| 33 | | 9th | 1st | | INTERNAL EXAMINATION | | | |
| 34 | | | 2nd | | Revision Internal Exam | | | |
| 35 | | | 3rd | | Define orifice & Flow through orifice | | | |
| 36 | | | 4th | 8 | Orifices coefficient & the relation between the orifice coefficients | | | |
| 37 | | 10th | 1st | | Classifications of notches & weirs | | | |
| 38 | | | 2nd | | Discharge over a rectangular notch or weir | | | |
| 39 | | | 3rd | | Discharge over a triangular notch or weir | | | |
| 40 | | | 4th | | Simple problems on above | | | |
| 41 | | 11th | 1st | | Definition of pipe | | | |
| 42 | | | 2nd | | Loss of energy in pipes | | | |
| 43 | MARCH | | 3rd | | Head loss due to friction: Darcy's and Chezy's formula (Expression only) | | | |
| 44 | | | 4th | | Solve Problems using Darcy's and Chezy's formula | | | |
| 45 | | 12th | 1st | 10 | Hydraulic gradient and total gradient line | | | |
| 46 | | | 2nd | | Doubt clearing class on 6th chapter | | | |
| 47 | | | 3rd | | Impact of jet on fixed and moving vertical flat plates | | | |
| 48 | | | 4th | | Impact of jet on fixed and moving vertical flat plates | | | |
| 49 | | 13th | 1st | | Derivation of work done on series of vanes | | | |
| 50 | | | 2nd | | Derivation of work done on series of vanes | | | |
| 51 | | | 3rd | | condition for maximum efficiency | | | |
| 52 | | | 4th | | condition for maximum efficiency | | | |
| 53 | | | 1st | | condition for maximum efficiency | | | |
| 54 | | | 2nd | | Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work, efficiency | | | |

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| 55 | APRIL | 14th | 3rd | 10 | Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work, efficiency | | | |
| 56 | | | 4th | | Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work, efficiency | | | |
| 57 | | 15th | 1st | | Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work, efficiency | | | |
| 58 | | | 2nd | | Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work, efficiency | | | |
| 59 | | | 3rd | | Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work, efficiency | | | |
| 60 | | | 4th | | Doubt clearing class on 7th chapter | | | |