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| Discipline : **MECHANICAL** **ENGG** | Semester : **4TH** | Name of the Teaching Faculty: **ER. MICHAEL SUVEER** |
| Subject: **FLUID MECHANICS** | No. of days/per week class allotted: **04** | Semester From date : **10.03.2022** To Date: **10.06.2022**  No. of Weeks: **15** |
| Week | Class Day | Theory / Practical Topics |
| 1ST | 1ST | Define fluid and its properties |
|  | 2ND | Description of fluid properties like Density, Specific weight |
|  | 3RD | Description of fluid properties like specific gravity, specific volume |
|  | 4TH | solve simple problems |
| 2ND | 1ST | solve simple problems. |
|  | 2ND | Definitions and Units of Dynamic viscosity |
|  | 3RD | Definitions and Units of Kinematic viscosity |
|  | 4TH | Definitions and Units of surface tension and capillary phenomenon |
| 3RD | 1ST | Definitions and units of fluid pressure, |
|  | 2ND | Definitions and units of pressure intensity and pressure head |
|  | 3RD | Statement of Pascal’s Law. |
|  | 4TH | Concept of atmospheric pressure, gauge pressure |
| 4TH | 1ST | Concept of vacuum pressure and absolute pressure |
|  | 2ND | Pressure measuring instruments Manometers (Simple and Differential) |
|  | 3RD | Bourdon tube pressure gauge(Simple Numerical) |
|  | 4TH | Solve simple problems on Manometer |
| 5TH | 1ST | Definition of hydrostatic pressure |
|  | 2ND | Total pressure and centre of pressure on immersed bodies(Horizontal bodies) |
|  | 3RD | Total pressure and centre of pressure on immersed bodies(Vertical bodies) |
|  | 4TH | solve simple problems |
| 6TH | 1ST | solve simple problems |
|  | 2ND | Archimedes ‘principle, concept of buoyancy, |
|  | 3RD | meta center and meta centric height (Definition only) |
|  | 4TH | Concept of floatation |
| 7TH | 1ST | Types of fluid flow |
|  | 2ND | Continuity equation(Statement |
|  | 3RD | Continuity equation(proof for one dimensional flow) |
|  | 4TH | Bernoulli’s theorem(Statement) |
| 8TH | 1ST | Bernoulli’s theorem(proof) |
|  | 2ND | Applications and limitations of Bernoulli’s theorem (Venturimeter, pitot tube) |
|  | 3RD | Solve simple problems |
|  | 4TH | Solve simple problems |
| 9TH | 1ST | Define orifice, Flow through orifice |
|  | 2ND | Orifices coefficient |
|  | 3RD | The relation between the orifice coefficients |
|  | 4TH | Classifications of notches & weirs |
| 10TH | 1ST | Discharge over a rectangular notch or weir |
|  | 2ND | Discharge over a triangular notch or weir |
|  | 3RD | Simple problems |
|  | 4TH | Simple problems |
| 11TH | 1ST | Definition of pipe |
|  | 2ND | Loss of energy in pipes. |
|  | 3RD | Head loss due to friction: Darcy’s |
|  | 4TH | Head loss due to friction: Chezy’s |
| 12TH | 1ST | Solve Problems using Darcy’s |
|  | 2ND | Solve Problems using Chezy’s |
|  | 3RD | Solve Problems using Chezy’s |
|  | 4TH | Hydraulic gradient definition |
| 13TH | 1ST | total gradient line |
|  | 2ND | Simple problems |
|  | 3RD | Impact of jet on fixed vertical flat plates |
|  | 4TH | Impact of jet on moving vertical flat plates |
| 14TH | 1ST | Derivation of work done on series of vanes |
|  | 2ND | condition for maximum efficiency. |
|  | 3RD | Impact of jet on moving curved vanes |
|  | 4TH | Impact of jet on moving curved vanes (continued) |
| 15TH | 1ST | illustration using velocity triangles |
|  | 2ND | derivation of work done, |
|  | 3RD | derivation of efficiencies |
|  | 4TH | Important question discussion |