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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, specificvolume |
|  | 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 instrumentsManometers (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 onimmersed bodies(Horizontal bodies) |
|  | 3RD  | Total pressure and centre of pressure onimmersed 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 maximumefficiency. |
|  | 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 |