Fluid Mechanics I

Course Code: 43
Credits: 3
Course Type: Theoretical
Requisites: Differential Equations
Course Length: 51 hours

Outlines:

1. Fundamental Concepts of Fluids
   Fluid Properties

2. Fluid Statics and Pressure Measurements
   Manometry
   Hydrostatics Forces
   Solid-like motion
   Buoyancy
   Stability

3. Fluid Kinematics and Reynolds Transport Theorem
   Some concepts of fluid motion
   Acceleration
   Reynolds Transport Theorem

4. Conservation of Mass, Momentum and Energy for Control Volume
   Integral form of Continuity
   Linear Momentum
   Angular Momentum
   Conservation of Energy

5. The Bernoulli Equation and Applications
   Flow measurements based on Bernoulli equation

6. Dimensional Analysis and Similitude
7. Viscous Flow in Pipes and Ducts,

Reynolds number,

Laminar flow

Turbulent Flow

Flow Measurements

References