

Course Title Fluid Mechanics-I	Course Code ME-230	Credit Hours 3 – 0
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Text Book:

- Munson, Young And Okiishi HT John, Fundamentals Of Fluid Mechanics, J. Wiley 2. & Sons.

Reference Books:

- Philip J. Pritchard and John C. Leylegian, Fox and McDonald's Introduction to Fluid Mechanics, J. Wiley & Sons.
- Frank M White, Fluid Mechanics. McGraw Hill.
- Fluid Mechanics, Fundamentals and Applications by Yunus A. Cengel

Course Objective:

To provide engineers with a foundational understanding of fluid mechanics principles and applications essential for engineering design and analysis.

Course Outline:

- Fluid Properties: Definition of fluid and its classification, Concept of continuum and Properties of the fluid.
- Fluid Statics: Concept of Pressure and basic equations for compressible and incompressible, Pressure measurements and devices, Hydrostatics forces on plane and curved surfaces, Buoyancy and Stability and Pressure variation in fluid with rigid body motion.
- Fluid Kinematics: Flow characteristics, Descriptions of Velocity and acceleration field (Streamlines, streak lines and path lines), Control volume and representation of system and Deriving Reynolds transport theorem (RTT).
- Fluid Dynamics: Application of Newton's 2nd law in fluids, Total, stagnation and dynamic pressure and Deriving Bernoulli equation and its applications.
- Integral Analysis of Fluid Flow: Deriving continuity equation using RTT, Deriving linear momentum equation using RTT and Deriving moment of momentum equation using RTT.
- Dimensional Analysis, Similitude and Modeling: Dimensional analysis

Description	Percentage Weightage (%)
Assignments	05-10%
Quizzes	10-15%
Mid Semester Exams	30-40%
End Semester ASSESSMENTS Exam	40-50%

