ME 520 Fluid Mechanics (3-0-0-6)

Fluid kinematics; Integral and differential forms of governing equations; Mass, momentum, and energy conservation equations; Navier-Stokes equations and its applications; Potential flow; Laminar boundary-layer; Free-shear flows: jet, wake, and mixing layer; Instability and transition; Turbulent flow; Compressible flow: Isentropic flow; flow with area change; flow with heat transfer; flow with friction.

Texts:

[1] B.R.Munson, D.F.Young and T.H.Okiishi., *Fundamental of Fluid Mechanics*, John Wiley and Sons., 1994.

[2] P.M.Gerhar, R.J.Gross and J.I.Hochstein., *Fundamentals of Fluid Mechanics*, Addison-Wesley Publishing Co., 1993.

[3] H.Schlichting, *Boundary Layer Theory*, McGraw-Hill Series in Mechanical Engineering, 1979.

[4] F.M.White, *Fluid Mechanics*, McGraw-Hill international editions., 1994.

[5] F.M.White, *Viscous Fluid Flow*, McGraw-Hill international editions., 1991