**1st First week (1 lecture):** Introduction;

**2nd week (5 lectures):** Definition of a fluid, fluid as a continuum, velocity field, flow visualization (NSF video), timeline, pathline, streakline, streamline, Stress field, Deformation rate, viscosity, Newtonian and non-Newtonian fluids;

**Assignment #1**: 2.1, 2.7, 2.15, 2.31, 2.41, 2.51, 2.59

**3rd week (5 lectures):** Fluid statics – Pressure, basic equation and variation of pressure for incompressible liquids and gases. [*Also read the derivation of pressure being independent of orientation from F. M. White’s text.*], hydrostatic forces on submerged surfaces (only plane ones, not curved); Reynolds Transport theorem, Conservation of mass.

**Assignment #2:** 3.21, 3.23, 3.26, 3.45, 3.51, 3.52, 3.66, 4.13, 4.17, 4.25, 4.35, 4.38.

**4th week (5 lectures):** Momentum equation for inertial CV, Momentum equation for CV with rectilinear acceleration, differential analysis of fluid motion – conservation of mass, Motion of a fluid particle, substantial derivative, rotation of a fluid element.

**Assignment # 3:** 4.63, 4.65, 4.67, 4.72, 4.78, 4.82, 4.87, 4.100, 4.103, 4.142, 4.151, 4.175, 5.7, 5.19, 5.39, 5.49, 5.69, 5.86, 5.87.