

## CHAPTER 11: Fluids

$$\text{Mass density : } \rho = \frac{m}{V}$$

$$\text{Pressure : } P = \frac{F}{A}$$

$$\text{Pressure dependence on height : } P_2 = P_1 + \rho gh$$

$$\text{Bouyant Force : } F_B = W_{\text{displaced fluid}} = \rho_{\text{fluid}} V_{\text{submerged}} g$$

$$\text{Mass flow rate : } \rho Av$$

$$\text{Volume flow rate : } Q = Av$$

$$\text{Equation of Continuity : } \rho_1 A_1 v_1 = \rho_2 A_2 v_2$$

*Bernoulli's Equation :*

$$P_1 + \frac{1}{2} \rho v_1^2 + \rho gh_1 = P_2 + \frac{1}{2} \rho v_2^2 + \rho gh_2$$