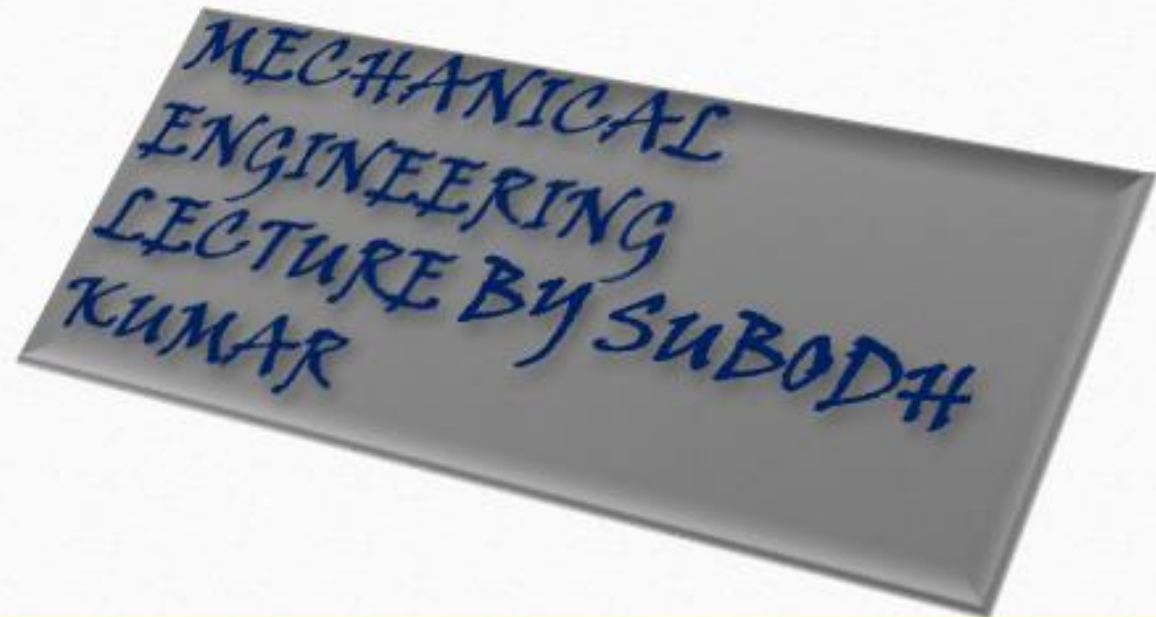




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What is fluid ?

- A **fluid** is a substance that continuously deforms (flows) under an applied shear stress, no matter how small the shear stress may be. Even though the fluid comes to rest when the shear stress is removed.
- Fluid has no fixed shape and size in open atmosphere.
- Fluid basically divided into two category liquid and gas.
- Liquid can form a free surface and gas can not form free surface.
- Water ,blood ,petrol, Honey ,kerosene oil, Wine, Mercury (a **liquid** metal), Milk are liquids and air , carbon dioxide , Hydrogen ,Nitrogen, Oxygen ,Helium, Neon ,Argon.
- Solids can resist tensile ,compressive and shear forces upto a certain limit and fluid have negligible tensile strength it can resist the compressive stress only when it is kept in the container.

Introduction of fluid mechanics

- Fluid mechanics is the study of fluids at rest or in motion and interaction of fluids with other fluids or solids at boundaries.

Fluid mechanics may be divided into three divisions

- (a) fluid statics
- (b) fluid kinematics
- (c) fluid dynamics



Fig. Water collected in a dam

(a) Fluid statics or Hydrostatics

- The study of fluids at rest is called fluid statics.
- The fluid elements are free from shearing stress.
- Pressure in a fluid or exerted by a fluid on an immersed body.

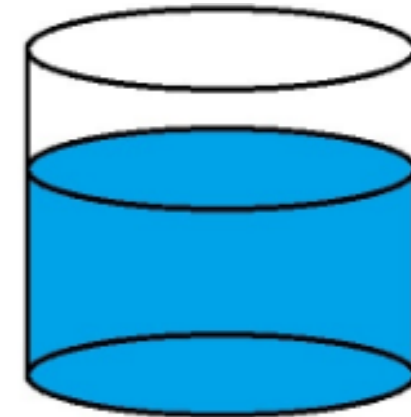


Fig. fluid stored in a container

(b) fluid kinematics

- The study of fluids in motion ,where pressure forces are not considered is called fluid kinematics.

(c) Fluid dynamics

- The study of fluids in motion ,where pressure forces are considered is called fluid dynamics.



THANKYOU