Mechanical Properties of Materials:

Strength, elasticity, plasticity, stiffness, malleability, ductility, brittleness, toughness, hardness, resilience, hardness, machine ability, formability, weld ability. Elementary ideas of fracture fatigue and creep.

Strength: Strength of materials is a field of mechanics that deals with forces and deformations that result from their acting on a material. It is concerned with the ability of a material to resist mechanical forces when in use. The strength of a material is its ability to withstand an applied load without failure or plastic deformation.

Elasticity: Elasticity in materials refers to the ability of a body to resist deformation and return to its original shape and size when external forces are removed.

Plasticity: Plasticity is the ability of a solid material to undergo permanent deformation, a non-reversible change of shape in response to applied forces.

Stiffness: Stiffness of material refers to its ability to resist deformation in response to an applied force.

Malleability: Malleability is the ability to be easily changed into a new shape or the fact of being easily influenced.

Ductility: Ductility is the ability of a material to sustain large amounts of plastic deformation.

Brittleness: Brittleness describes the property of a material that fractures when subjected to stress but has little tendency to deform before rupture.