

# GUJARAT TECHNOLOGICAL UNIVERSITY

M.E

**(Mechanical) Machine Design**

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## THEORY OF ELASTICITY

Component of stress and strain, their Principal values and invariants. Generalized Hook's Law. General 3-D problems and classical theorems. Plane stress and plane strain. Stress functions; Applications; Complex potentials in two dimensional and axisymmetric problems; Variational methods; Anisotropic elasticity; Thermoelasticity, Finite deformation elasticity.

### **References:**

1. S.P. Timoshenko and J.N. Goodier, Theory of Elasticity, McGraw –Hill
2. Mohammed Amin, Computational Elasticity, Narosa Publishing House
3. L. S. Shrinath, Advanced Mechanics of Solids, TMH