

ME 512 THEORY OF ELASTICITY

Syllabus

Stress strain and displacement; equilibrium and compatibility; Two dimensional problems using Airy stress function; problems in rectangular and polar coordinates; asymptotic fields at discontinuities; forces and dislocations; contact and crack problems; rotating and accelerating bodies. Three-dimensional problems using Galerkin and Papkovitch-Neuber solutions; singular solutions; spherical harmonics. Thermoelasticity. Axisymmetric contact and crack problems. Axisymmetric torsion. Energy theorems and approximate methods; Betti's reciprocal theorem.