Course Name: Theory of plasticity

Course Number: 20142

Credit: 3

Course Content (outline)

1. Introduction and One-Dimensional Analysis
2. General Principles
   Stress and Strain Tensors, Equilibrium Equations
3. Yield and Failure Criteria
   Tresca Criterion, von Mises Criterion, Rankine Criterion, Mohr- Coulomb Criterion, Drucker- Prager Criterion, Other Criteria
4. Perfectly Plastic Stress Analysis
5. Hardening Plastic Stress Analysis
6. Selected Topics
   Rate Dependent Plasticity, Damage plasticity, Strain Space Formulations, Finite Deformation Plasticity, Dislocation Theory of Metals and Plastic Deformation of Crystals, Models for Concrete, Ceramics, and Composites

References: