

**Course Name:**

Theory of Plasticity

Course Number: 20-142	Credit: 3
Program: Graduate	Course Type: Technical Selective
Prerequisite: -	Corequisite: -

Course Description (Objectives):

This course focuses on the study of material behavior beyond the elastic region. Well-known constitutive models are introduced, and the stress and strain of the material in the post-elastic region are calculated in structural elements based on these models.

Course Content (outline):

- Chapter 1: Introduction to One-Dimensional Analysis
- Chapter 2: General Concepts of Stress and Strain Tensors, Equilibrium Equations
- Chapter 3: Yield and Failure Criteria
- Chapter 4: Fully Plastic Stress Analysis
- Chapter 5: Strain Hardening Plastic Stress Analysis
- Chapter 6: Selective Topics

References:

- W.F. Chen and H. Zhang, Structural Plasticity, Springer-Verlag, 1991.
- A. Khan and S. Huang, Continuum Theory of Plasticity, J. Wiley & Sons, 1995.
- M. Jirasek and Z.P. Bazant, Inelastic Analysis of Structures, J. Wiley & Sons, 2002.