

**Department: Civil & Environmental Engineering**  
**Level and Major: Graduate - Structure Engineering**

**Division: Civil engineering**

---

**Course Title:** Theory of Elasticity

**Number of Credits: 3**

**Prerequisite (Corequisite):** Structural analysis (I), Concrete Technology **Lecturer: -**

---

### **Course Topics**

- Introduction
- Tensors of stress and strain and their linear relation
- Relations of stress on the plate and strain on the plate, balance, adaptability, boundary conditions-saint venant's principle
- Two-dimensional elasticity problems in rectangular coordinates, stress function Solve with the help of polynomials and Fourier Series, Calculate deformations
- Two-dimensional problems in polar Coordinates, Dominant relations in polar coordinates problems with axial Symmetry Curved bars, Edge displacement, circular holes, Direct border, wedge, Concentrated force, Solve the Series, Split
- General theorems in three-dimensional states Adaptability balance, displacement strain energy virtual work, uniqueness theorem, The theorem of interactions
- Equation of motion in terms of displacement, Scalar and Vector potentials, wave equation, Green function, Bossiness problem
- Foundations of the Theory of plasticity, Yield surfaces, Von Misses criteria Tresca, Mohr. Coulomb and Drucker -Pager

Course Description:

Course Goals and objectives:

Course topics:

The Course aims to:

Reading sources:

Evaluation: