Department of Civil Engineering

Course Name:

Continuum Mechanics I

Course Number: 20-136	**Credit:** 3
Program: Graduate	**Course Type:** Technical Selective
Prerequisite: -	**Corequisite:** -

Course Description (Objectives):

In this course, students become familiar with the concepts of large deformations and stress-dependent behavior in materials.

Course Content (outline):

- Chapter 1: Principles and General Concepts
- Chapter 2: Deformations: Lagrangian and Eulerian Variables – Virtual Transformation
- Chapter 3: Stresses: Stress Tensor – Applications
- Chapter 4: Motion Problem – Constitutive Laws
- Chapter 5: Thermodynamic Evolution
- Chapter 6: Introduction to System Modeling
- Chapter 7: Common Problems in Solid Mechanics
- Chapter 8: Introduction to Structural Theory
- Chapter 9: Overview of Linear Thermo-Elasticity
- Chapter 10: Common Methods in Linear Homogeneous Elasto-Statics under Uniform Stress
- Chapter 11: Vibrations and Wave Propagation in Elastic Solids

References:

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