Department of Civil Engineering

**Course Name:**

Ductile Behavior of Steel Structures

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| **Course Number:** 20-002 | **Credit:** 3 |
| **Program:** Graduate | **Course Type:** Technical Selective |
| **Prerequisite**: - | **Corequisite:** - |

**Course Description (Objectives):**

The objective of this course is to familiarize students with the behavior of steel members when they enter the inelastic region. Students will be introduced to concepts of yielding, fatigue, and the analysis of structural behavior in this region.

**Course Content (outline):**

- Chapter 1: Material Behavior
- Chapter 2: Ductility
- Chapter 3: Manufacturing Processes
- Chapter 4: Load-Carrying Capacity of Sections
- Chapter 5: Load-Carrying Capacity of Systems
- Chapter 6: Physical-Mathematical Models for Representing Material Behavior, Rheology

**References:**


- Beedle, L.S. Plastic design of steel frames, Wiley, N.Y., 1958.
- Baker, J. and Heyman, J. Plastic Design of Frames, Cambridge University Press, London, 1969.
- Bruneau, M., Uang, C.M., and Whittaker, A. Ductile Design of Steel Structures, McGrawHill, Boston. 1998.
- Beedle, L.S. and Galambos, T.V., Plastic Design of Steel Structures, in Gaylord, Jr., E.H. and Gaylord, C.N. (Editors), Structural Engineering Handbook (Section 7), McGraw-Hill, N.Y., 1968.
- Galambos, T.V., Combined Bending and Compression, in Tall, L., Beedle, L.S. and Galambos, T.V. (Editors), Structural Steel Design (Chapter 11), Ronald Press, N.Y., 1964.
- Naeim, F. (Editor), The Seismic Design Handbook, Van Nostrand Reinhold, N.Y. 1989.