Course Name:
Loading

<table>
<thead>
<tr>
<th>Course Number: 20-209</th>
<th>Credit: 1</th>
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<tbody>
<tr>
<td>Program: Undergraduate</td>
<td>Course Type: Technical elective</td>
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<tr>
<td>Prerequisite: Dynamics; Structural Analysis I</td>
<td>Corequisite: -</td>
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Course Description (Objectives):
The primary objective of this course is to learn how to compute the loads that are exerted on structures during their lifespan. The course is based on the Section 6 of the National Building Code of Iran.

Course Content (outline):

- Introduction
  - Load categories
  - Load-bearing elements
  - Load distribution
  - Tributary area
- Dead load
  - Floor load
  - Wall and partition loads
- Live load
  - Distributed and concentrated live load
  - Critical loading conditions
  - Live load reduction
  - Dynamic live loads
  - Crane loads (optional)
- Snow load
  - Basic snow load
  - Symmetric and asymmetric loading
- Wind load
  - Vertical velocity gradient
  - Vortex and gust
  - Basic wind velocity and pressure
  - Velocity variation and shape factors
- Non-building structures
- overturning, slip, and lateral displacement provisions

- Earthquake load
  - An introduction to engineering seismology and earthquake engineering
  - Plan and vertical regularity
  - Equivalent static load method
  - Seismic-force resisting elements and systems
  - Effective seismic weight
  - Peak ground acceleration
  - Period, spectral response, importance, and strength reduction factor of buildings
  - Vertical distribution of seismic loads
  - Horizontal distribution of seismic loads considering torsion
  - Loading direction
  - Separation gap
  - Serviceability level earthquake
  - Overturning provisions
  - Vertical seismic load

- Load combination

References: