Course Name:
Loading of Structures

<table>
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<th>Course Number:</th>
<th>20-028</th>
<th>Credit:</th>
<th>3</th>
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<tr>
<td>Program:</td>
<td>Undergraduate</td>
<td>Course Type:</td>
<td>Technical elective</td>
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<tr>
<td>Prerequisite:</td>
<td>Structural Analysis I</td>
<td>Corequisite:</td>
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Course Description (Objectives):
In this course students learn the principles and engineering methods of determining the forces acting on the civil structures. It is the first and the most important step towards analyzing and designing of structures. Due to the nature of the loads and the complexity associated with their determination, experimental measurements and analytical methods are used and corresponding results are compiled in the loading Standards. Accordingly, calculating the actions on the structures caused by the gravitational force, thermal effect, impact, wind, snow, earthquake, blast and implementation of these actions on the analytical models of the structures based on the Standard provisions is the main concern of this course.

Course Content (outline):

1. Loading Standards, Principles of Loading and Corresponding Probabilistic Bases
2. Dead Loads
3. Live Loads
4. Soil Loads and Hydrostatic Pressure
5. Snow Loads
6. Wind Loads
7. Seismic Loads
8. Flood Loads
9. Rain Loads
10. Ice Loads
11. Blast loads
12. Combinations of Loads and Computer-based Modeling
References: