

## Webinar on «Design of Steel Structures for Buildings in Seismic Areas»

Reference book: Design of Steel Structures for Buildings in Seismic Areas

Speakers: Prof. Raffaele Landolfo, University of Naples "Federico II", Italy  
 Prof. Dan Dubina, Politehnica University of Timisoara, Romania  
 Prof. Mario D'Aniello, University of Naples "Federico II", Italy  
 Prof. Aurel Stratan, Politehnica University of Timisoara, Romania

8 sessions of 90 minutes on 4 weeks, from 10:30 - 12:00 CET

- o Week 1: Tuesday 16/02 + Thursday 18/02
- o Week 2: Tu 23/02 + Th 25/02
- o Week 3: Tu 02/03 + Th 04/03
- o Week 4: Tu 09/03 + Th 11/03

<u>Date</u>	<u>Topic</u>	<u>Content</u>	<u>Speaker</u>
<b>Week 1</b>			
<b>16/02/2021</b> <b>10:30-12:00</b>	Welcome & Introduction	<ul style="list-style-type: none"> <li>- Content, objectives</li> <li>- Logic of the book and of the lectures</li> <li>- Structures at risk, examples of failures</li> </ul>	Professor Raffaele LANDOLFO
	Principle and fundamentals of Seismic Design	<ul style="list-style-type: none"> <li>- Philosophy and contents of EN 1998. Structures located in moderate to high seismic areas.</li> <li>- Structures located in low seismic areas.</li> <li>- Q &amp; A</li> </ul>	Professor Raffaele LANDOLFO
<b>18/02/2021</b> <b>10:30-12:00</b>	Conceptual design of seismic resistant structures	<ul style="list-style-type: none"> <li>- Structural Systems, Ductility Classes, Choice of Material, Ductile Components, Design Overstrength, Fuses and Replaceable Elements</li> <li>- Q &amp; A</li> </ul>	Professor Dan DUBINA
<b>Week 2</b>			
<b>23/02/2021</b> <b>10:30-12:00</b>	Structural analysis for seismic action	<ul style="list-style-type: none"> <li>- Seismic load combination. Overview of structural analysis methods. Modal response spectrum analysis. Effective modal mass. The lateral force method. Linear dynamic analysis. Pushover analysis. Non-linear dynamic analysis. Accidental torsion. Accounting for torsional effects in structural analysis. Combination of the effects of the components of the seismic action.</li> <li>- Q &amp; A</li> </ul>	Professor Aurel STRATAN
<b>25/02/2021</b> <b>10:30-12:00</b>	Seismic design of MRFs	<ul style="list-style-type: none"> <li>- Discussion of differences between DCH/DCM/DCL</li> <li>- Structural characteristics of moment resisting frames. Choice of ductility class. Design for ductility of dissipative components. Capacity design rules for non-dissipative components.</li> <li>- Q &amp; A</li> </ul>	Professor Mario D'ANIELLO

<u>Date</u>	<u>Topic</u>	<u>Content</u>	<u>Comments</u>
<b>Week 3</b>			
<b>02/03/2021</b> <b>10:30-12:00</b>	Seismic design of X-CBF and V-CBFs	<ul style="list-style-type: none"> <li>- Discussion of differences between DCH/DCM/DCL</li> <li>- Structural characteristics of concentrically brace frames. Choice of ductility class. Design for ductility of dissipative components. Capacity design rules for non-dissipative components</li> <li>- Q &amp; A</li> </ul>	Professor Mario D'ANIELLO
<b>04/03/2021</b> <b>10:30-12:00</b>	Seismic design of eccentrically braced frames and dual frames	<ul style="list-style-type: none"> <li>- Structural characteristics of eccentrically braced frames. Choice of ductility class. Design for ductility of dissipative components. Capacity design rules for non-dissipative components.</li> <li>- Specific requirements for dual frames. Benefits of dual frames. Re-centring dual frames.</li> <li>- Q &amp; A</li> </ul>	Professor Aurel STRATAN
<b>Week 4</b>			
<b>09/03/2021</b> <b>10:30-12:00</b>	Design Case Studies - 1	<ul style="list-style-type: none"> <li>- (1) Multistory Building (2) Single Story Industrial Hall</li> <li>- Q &amp; A</li> </ul>	Professor Dan DUBINA
<b>11/03/2021</b> <b>10:30-12:30</b>	Design Case Studies – 2	<ul style="list-style-type: none"> <li>- Lightweight Steel Structures (3) Residential and (4) Social Buildings</li> <li>- Q &amp; A</li> </ul>	Professor Raffaele LANDOLFO
	Short Conclusions		Professor Raffaele LANDOLFO