



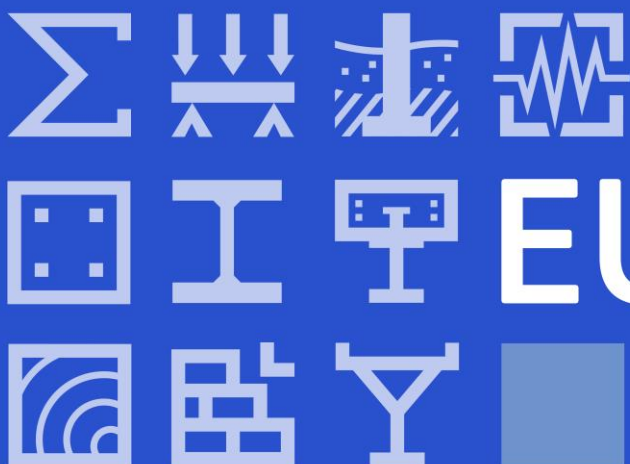
Programme



Eurocodes Balkan Summer School 2021

Seismic design of concrete buildings

5-16 July 2021



EUROCODES

Joint
Research
Centre

Eurocodes Balkan Summer School | Seismic design of concrete buildings

JRC supports the non-EU Balkan region to build capacities for adapting national legislation in the field of construction to the EU legal framework. Starting in 2013, the JRC has organized specialized workshops and provided scientific and technical support to the non-EU Balkan region partners for the adoption and implementation of the European standards for structural design – the **Eurocodes (EN 1990 – EN 1991)**.

Now, it is time to join us for the first edition of the Eurocodes Balkan Summer School on the seismic design of concrete buildings, organised by the European Commission's Joint Research Centre (JRC) and its Safety and Security of Buildings Unit.

Due to the continuously evolving pandemic crisis, the Eurocodes Balkan Summer School will be held online.

Why this Summer School?

The Balkan region has suffered numerous and powerful earthquakes in the past decades. More recently, on 26 November 2019, a Mw 6.4 earthquake hit Albania, with epicentre 34 km northwest of its capital, Tirana, near the coastal city of Durrës. 51 people were killed, hundreds were sent to hospitals and thousands were left homeless. However, it was reported that new structures in the area, which were designed implementing the Eurocodes principles, suffered only minor damages. Four months later, on 22 March 2020, a Mw 5.3 earthquake struck a wide area north of Croatia's capital, Zagreb, the largest to affect the city in 140 years. At least 17 people were injured and widespread damage was reported, including Zagreb's iconic cathedral.

Indeed, due to the high seismicity of the Balkan region, most non-EU countries in the Balkan region are close to, or are intending to, formally adopt EN 1998 "Eurocode 8: Design of structures for earthquake resistance", which provides the principles and requirements for the design of structures for earthquake resistance. JRC will provide technical and practical assistance for the Eurocodes implementation in the non-EU Balkan region, addressing the seismic design of concrete buildings through the Eurocodes Balkan Summer School.

The Summer School provides you with a unique opportunity to learn to use in practice the Eurocodes from experts directly involved in the Eurocodes development and drafting while sharing knowledge and experience with your peers in the group sessions.

What's on offer for you?

Ten half-day sessions of a highly engaging and interactive programme including keynote lectures and lectures with worked examples by the Eurocodes' drafters, group work on assignments under expert supervision, and an interactive classroom "*talk with the expert*" powered by you!

The Summer School scientific programme will focus on the practical use of EN 1998 for the seismic design of reinforced concrete buildings, along with the relevant parts from EN 1990 (Basis of Design), EN 1991 (Actions on structures), EN 1992 (Design of concrete structures) and EN 1997 (Geotechnical design aspects). We will also dedicate time to present and work hands-on the simulation of seismic response of concrete buildings, explaining various analysis methods, design verifications and use of appropriate software. To keep up with the latest developments, we will also give you an overview of the evolution of the Eurocodes towards the publication of their second generation, expected by 2026, with particular focus on aspects related to the seismic design of reinforced concrete buildings.

The aim of the Summer School is to provide an overview on seismic design procedures for typical multi-storey reinforced concrete buildings. At the end of the Summer School, you are expected to:



- Have an overall understanding of the seismic design concepts, procedures and current practices using the relevant Eurocode Parts, enabling you to plan and direct the construction activity appropriately.
- Understand the methodology of seismic design to be able to execute a proper design using Eurocode 8 and relevant Eurocode Parts.
- Have a better appreciation of various construction details with respect to seismic response when applying the Eurocodes.

Who can participate?

Civil/Structural Engineers with a strong interest in seismic design and assessment of reinforced concrete buildings from the Western Balkan region (Albania, Bosnia and Herzegovina, North Macedonia, Kosovo*, Montenegro and Serbia), Turkey (Candidate country for EU membership) and Moldova (Horizon Europe Associated country) may attend the Eurocodes School.

We are looking for participants with a Bachelor's degree in Civil/Structural Engineering (*essential*) and a Master's degree in Civil, Earthquake or Structural engineering (*preferred*). The curriculum of the Summer School is designed for designers having already professional knowledge on the design of building structures for earthquakes resistance. In particular, participants are expected to have minimum two years of collaboration or contribution to design projects following the completion of relevant studies (alternatively 240 credits of continuous professional development) (*compulsory*) but no more than five years of related professional experience following the completion of the latest relevant studies. Knowledge of EN 1990 and EN 1991 would be useful, but not essential.

We expect a continuous and active presence from all participants to take full benefit of the School. All lectures and discussions will be in English and no translation will be provided.

A certificate of attendance will be provided at the end of the Summer School by the Organizing Committee.

How to express your interest?

To express your interest, you can contact the Engineering Chamber in your region (or other relevant stakeholder as the Institution of Civil Engineers/Association of Earthquake Engineering), providing the following documents:

- A motivation letter (max. one page) explaining why you are interested in attending the Summer School and how it will benefit you in your career.
- A short CV of two pages maximum, stating clearly your education background and related professional experience.
- Contact details of at least two referees that can provide a reference for you, upon request.

The maximum number of participants will be 40 and the Organizing Committee seeks to achieve a balance between nationalities and gender of participants, where possible.

The closing date for applications is 20 May 2021. Decisions on acceptance will be announced by email from the Organizing Committee starting on 01 June 2021.

* *This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.*



Event details

Registration of the invited participants will be done online through a dedicated registration site. The Organizing Committee will announce the registration details to the invited participants. There will be no registration fee for the Summer School.

Relevant training material (presentations, worksheets etc.) will be distributed to the participants at the Eurocodes School. The material from the training event will be collected in an appropriate training kit package and will be made available on the JRC Eurocodes website after the School (<https://eurocodes.jrc.ec.europa.eu/>). The training scheme and material is envisaged to be of interest to other countries worldwide that have expressed interest in the Eurocodes and in particular EN 1998.

Contacts

Please direct all enquiries to JRC-EUROCODES-ENLARGEMENT@ec.europa.eu.

Organizing Committee

- Artur Pinto, Silvia Dimova, Adamantia Athanasopoulou, Luísa Sousa, Maria Fabregat Morillas

European Commission, Joint Research Centre, Directorate for Safety, Security and Migration, Safety and Security of Buildings Unit

- Roberta Apostolska

University Ss Cyril and Methodius, Institute of Earthquake Engineering and Engineering Seismology, IZIIS, Skopje, Republic of North Macedonia

- Antonio Correia

Laboratório Nacional de Engenharia Civil (National Laboratory for Civil Engineering), LNEC, Lisbon, Portugal, CEN/Technical Committee 250 "Structural Eurocodes" Sub-Committee 8

With the support of

European Commission - JRC Enlargement and Integration Action

CEN/Technical Committee 250 "Structural Eurocodes"

CEN/Technical Committee 250 "Structural Eurocodes" Sub-Committee 8 "Eurocodes 8: Design of Structures for Earthquake Resistance"

Institute for Standardization of Serbia (ISS)





Faculty of Civil Engineering, University of Belgrade, Serbia



Summer School Programme

All time indications are in Central European Summer Time (CEST)

Legend

	Presentation (open to all participants)		Lecture with worked examples (open to all participants)
	Keynote Lecture (open to all participants)		Worked examples (group assignments) (restricted to full participants)

*Note: Senior engineers invited as "**passive participants**" will be able to attend the sessions noted as Presentation, Keynote Lecture and Lecture with worked examples. Participants invited to the **full programme** of the Summer School should attend all sessions, including the sessions noted as Worked examples that will take place as break-out sessions.*



Monday, 5 July 2021		
08:30 – 09:00	Preparation for session start (connection check-ups)	
09:00 – 09:30	Welcome addresses <i>TBC</i>	
09:30 – 10:00	Presentation Eurocodes Balkan Summer School curriculum and activities Speakers Adamantia Athanasopoulou <i>Joint Research Centre of the European Commission</i> Antonio A. Correia <i>CEN/Technical Committee 250 "Structural Eurocodes" Sub-Committee 8</i> Roberta Apostolska <i>University Ss Cyril and Methodius, Institute of Earthquake Engineering and Engineering Seismology, IZIIS, Skopje, Republic of North Macedonia</i>	
10:00-11:00	Keynote Lecture Introduction to the Eurocodes Lecturer: Nikolaos Malakatas <i>CEN/TC250 "Structural Eurocodes" Sub-Committee 1 Chairman</i>	
11:00 – 11:30	Break	
11:30 – 12:30	Keynote Lecture Introduction to EN 1990 "Eurocode: Basis of structural design" for the design of reinforced concrete buildings Lecturer: Paolo Franchin <i>Sapienza University of Rome, Department of Structural and Geotechnical Engineering, Professor of Structural Design and Earthquake Engineering</i>	
12:30 – 13:30	Keynote Lecture Introduction to EN 1991 "Eurocode 1: Actions on structures" for the design of reinforced concrete buildings Lecturer: Nikolaos Malakatas <i>CEN/TC250 "Structural Eurocodes" Sub-Committee 1 Chairman</i>	
13:30 – 13:40	Wrap-up and preparation for next day activities	



Tuesday, 6 July 2021		
08:30 – 09:00	Preparation for session start (connection check-ups)	
09:00 – 10:00	<p>Keynote Lecture Design of reinforced concrete buildings. Part A - EN 1992 "Eurocode 2: Design of concrete structures"</p> <p>Lecturer: Michael Fardis <i>CEN/TC250 "Structural Eurocodes" Vice-Chairman</i></p>	
10:00 – 11:00	<p>Keynote Lecture Introduction to EN 1998 "Eurocode 8: Design of structures for earthquake resistance"</p> <p>Lecturer: Philippe Bisch <i>CEN/TC250 "Structural Eurocodes" Sub-Committee 8 Chairman</i></p>	
11:00 – 11:30	Break	
11:30 – 12:30	<p>Lecture with worked examples Seismic actions in EN 1998 "Eurocode 8: Design of structures for earthquake resistance"</p> <p>Lecturer: Alain Pecker <i>AP Consultant, Professeur Ecole des Ponts Paris Tech, CEN/TC250 "Structural Eurocodes" Sub-Committee 8 PT4 Leader</i></p>	
12:30 – 13:30	<p>Lecture with worked examples Conceptual design and methods of analysis</p> <p>Lecturer: Antonio Correia <i>CEN/Technical Committee 250 "Structural Eurocodes" Sub-Committee 8</i></p>	
13:30 – 13:40	Wrap-up and preparation for next day activities	



Wednesday, 7 July 2021		
08:30 – 09:00	Preparation for session start (connection check-ups)	
09:00 – 10:00	<p>Keynote Lecture Seismic design of reinforced concrete buildings. Part B - EN 1998 "Eurocode 8: Design of structures for earthquake resistance"</p> <p>Lecturer: Michael Fardis <i>CEN/TC250 "Structural Eurocodes" Vice-Chairman</i></p>	
10:00 – 11:00	<p>Lecture with worked examples Design of reinforced concrete buildings with EN 1992 (Eurocode 2) and EN 1998 (Eurocode 8)</p> <p>Lecturer: Humberto Varum University of Porto (FEUP), Portugal, Civil Engineering Department of the Faculty of Engineering, Professor</p>	
11:00 – 11:30	Break	
11:30 – 13:30	<p>Lecture with worked examples Simulation of seismic response of buildings. Analysis methods, design verifications and software</p> <p>Lecturer: Rui Pinho University of Pavia, Italy, Civil Engineering and Architecture Department, Professor</p>	
13:30 – 13:40	Wrap-up and preparation for next day activities	



Thursday, 8 July 2021		
08:30 – 09:00	Preparation for session start (connection check-ups)	
09:00 – 11:00	<p>Lecture with worked examples Seismic design of reinforced concrete buildings</p> <p>Lecturer: Humberto Varum University of Porto (FEUP), Portugal, Civil Engineering Department of the Faculty of Engineering, Professor</p>	
11:00 – 11:30	Break	
11:30 – 12:30	<p>Lecture with worked examples Simulation of seismic response of buildings. Analysis methods, design verifications and software</p> <p>Lecturer: Rui Pinho <i>University of Pavia, Italy, Civil Engineering and Architecture Department, Professor</i></p>	
12:30 – 13:30	<p>Keynote Lecture Geotechnical aspects in the seismic design of buildings</p> <p>Lecturer: Alain Pecker <i>AP Consultant, Professeur Ecole des Ponts Paris Tech, CEN/TC250 "Structural Eurocodes" Sub-Committee 8 PT4 Leader</i></p>	
13:30 – 13:40	Wrap-up and preparation for next day activities	



Friday, 9 July 2021		
08:30 – 09:00	Preparation for session start (connection check-ups)	
09:00 – 11:00	<p>Lecture with worked examples Geotechnical aspects in the seismic design of reinforced concrete buildings</p> <p>Lecturer: Alain Pecker <i>AP Consultant, Professeur Ecole des Ponts Paris Tech, CEN/TC250 "Structural Eurocodes" Sub-Committee 8 PT4 Leader</i></p>	
11:00 – 11:30	Break	
11:30 – 13:30	<p>Worked Examples Team work on assignments under expert supervision (break-out sessions)</p> <p>Lecturers: Antonio Correia <i>CEN/Technical Committee 250 "Structural Eurocodes" Sub-Committee 8</i> Joao Almeida <i>Université Catholique de Louvain (UCLouvain), Belgium, Assistant Professor</i></p>	
13:30 – 13:40	Wrap-up and preparation for next day activities	



Monday, 12 July 2021		
08:30 – 09:00	Preparation for session start (connection check-ups)	
09:00 – 11:00	<p>Keynote lecture Seismic assessment of buildings</p> <p>Lecturer: Paolo Franchin <i>Sapienza University of Rome, Department of Structural and Geotechnical Engineering, Professor of Structural Design and Earthquake Engineering</i></p>	
11:00 – 11:30	Break	
11:30 – 13:30	<p>Lecture with worked examples Seismic assessment of buildings</p> <p>Lecturer: Paolo Franchin <i>Sapienza University of Rome, Department of Structural and Geotechnical Engineering, Professor of Structural Design and Earthquake Engineering</i></p>	
13:30 – 13:40	Wrap-up and preparation for next day activities	



Tuesday, 13 July 2021		
08:30 – 09:00	Preparation for session start (connection check-ups)	
09:00 – 11:00	<p>Keynote lecture Seismic retrofitting of reinforced concrete buildings</p> <p>Lecturer: Andreas Kappos <i>Khalifa University of Science & Technology, United Arab Emirates, Department of Civil Infrastructure & Environmental Engineering, Professor</i></p>	
11:00 – 11:30	Break	
11:30 – 13:30	<p>Lecture with worked examples Seismic retrofitting of reinforced concrete buildings</p> <p>Lecturer: Rui Pinho <i>University of Pavia, Italy, Civil Engineering and Architecture Department, Professor</i></p>	
13:30 – 13:40	Wrap-up and preparation for next day activities	



Wednesday, 14 July 2021

08:30 – 09:00	Preparation for session start (connection check-ups)	
09:00 – 11:00	<p>Worked Examples Team work on assignments under expert supervision</p> <p>Lecturers: Antonio Correia <i>CEN/Technical Committee 250 "Structural Eurocodes" Sub-Committee 8</i> Joao Almeida <i>Université Catholique de Louvain (UCLouvain), Belgium, Assistant Professor</i></p>	
11:00 – 11:30	Break	
11:30 – 12:30	<p>Worked Examples Small groups work on assignments under expert supervision</p> <p>Lecturers: Antonio Correia <i>CEN/Technical Committee 250 "Structural Eurocodes" Sub-Committee 8</i> Joao Almeida <i>Université Catholique de Louvain (UCLouvain), Belgium, Assistant Professor</i></p>	
12:30 – 13:30	<p>Worked Examples Small groups work on assignments under expert supervision</p> <p>Lecturers: Antonio Correia <i>CEN/Technical Committee 250 "Structural Eurocodes" Sub-Committee 8</i> Joao Almeida <i>Université Catholique de Louvain (UCLouvain), Belgium, Assistant Professor</i></p>	
13:30 – 13:40	Wrap-up and preparation for next day activities	



Thursday, 15 July 2021

08:30 – 09:00	Preparation for session start (connection check-ups)	
09:00 – 10:00	<p>Worked Examples Small groups work on assignments under expert supervision</p> <p>Lecturers: Antonio Correia <i>CEN/Technical Committee 250 "Structural Eurocodes" Sub-Committee 8</i> Joao Almeida <i>Université Catholique de Louvain (UCLouvain), Belgium, Assistant Professor</i></p>	
10:00 – 11:00	<p>Worked Examples Small groups work on assignments under expert supervision</p> <p>Lecturers: Antonio Correia <i>CEN/Technical Committee 250 "Structural Eurocodes" Sub-Committee 8</i> Joao Almeida <i>Université Catholique de Louvain (UCLouvain), Belgium, Assistant Professor</i></p>	
11:00 – 11:30	Break	
11:30 – 12:30	<p>Worked Examples Small groups work on assignments under expert supervision</p> <p>Lecturers: Antonio Correia <i>CEN/Technical Committee 250 "Structural Eurocodes" Sub-Committee 8</i> Joao Almeida <i>Université Catholique de Louvain (UCLouvain), Belgium, Assistant Professor</i></p>	
12:30 – 13:30	<p>Worked Examples Interactive classroom "talk with the expert"</p> <p>Lecturers: TBC</p>	
13:30 – 13:40	Wrap-up and preparation for next day activities	



Friday, 16 July 2021		
08:30 – 09:00	Preparation for session start (connection check-ups)	
09:00 – 11:00	<p>Keynote lecture</p> <p>Second generation of the Eurocodes – highlights for the design of reinforced concrete buildings</p> <p>Lecturer: Philippe Bisch <i>CEN/TC250 "Structural Eurocodes" Sub-Committee 8 Chairman</i></p>	
11:00 – 11:30	Break	
11:30 – 12:00	<p>Presentation</p> <p>Designing with the Eurocodes – sharing experience from Serbia</p> <p>Speakers: Olga Djuric-Peric, Vesna Vicovac <i>asmec consultants d.o.o.</i></p>	
12:00 – 12:30	<p>Presentation</p> <p>Designing with the Eurocodes – sharing experience from Montenegro</p> <p>Speaker: TBC <i>Engineer Chamber of Montenegro, Chamber of Civil Engineer</i></p>	
12:30 – 13:00	<p>Presentation</p> <p>Education programmes and needs supporting the practical implementation of the Eurocodes</p> <p>Speakers: Branko Milosavljević and Veljko Koković <i>Faculty of Civil Engineering, University of Belgrade, Serbia</i></p>	
13:00 – 13:30	<p>Presentation</p> <p>Eurocode 8 implementation status: presentation of survey results</p> <p>Speaker: Roberta Apostolska <i>University Ss Cyril and Methodius, Institute of Earthquake Engineering and Engineering Seismology, IZIIS, Skopje, Republic of North Macedonia</i></p>	
13:30 – 14:00	Closure	

