

## Registration

- Students, PhDs, research fellows belonging to DICATAM: **free of charge**
- Other students, PhDs, research fellows: **200 €**
- Engineers and practitioners: **400 €**
- Engineers of Brescia, CTE and *fib* members: **350 €**

## International Bank Transfer:

**Account Holder:** Università degli Studi di Brescia, Piazza del Mercato, 15, zip: 25121, BRESCIA – ITALY

**VAT NUMBER:** 01773710171, **FISCAL CODE:** 98007650173

**IBAN CODE:** IT57 Q 05696 11200 000013650X67

**BIC CODE:** POSOIT22 - **SWIFT CODE:** POSOIT22

**Bank:** Banca Popolare di Sondrio, 22 Via B. Croce – 25121 - BRESCIA, Italy

If possible, while making the payment, please mention the **REASON OF PAYMENT:** "Bridge Summer school Registration + your Family and First name"

<https://bridgesummerschool2018.unibs.it/Registration.html>

## Contacts

**Professor Giovanni Plizzari**, University of Brescia

Phone: (+39) 030-3711-201

e-mail: [giovanni.plizzari@unibs.it](mailto:giovanni.plizzari@unibs.it)

**Professor Fausto Minelli**, University of Brescia

Phone: (+39) 030-3711-277

e-mail: [fausto.minelli@unibs.it](mailto:fausto.minelli@unibs.it)

## Organizing committee

Professor Giovanni Plizzari

Professor Fausto Minelli

Nico Di Stefano

Enrico Faccin

Luca Pascali



## Venue

Set between Milan and Verona at the foot of the Alps, Brescia is the second largest city in Italy's northern Lombardy Region, with 200.000 inhabitants. The city's rich history dates back to pre-Roman times, when it was a Gallic capital. Among the many great local sights are the 11th-century "Duomo Vecchio" (Old Cathedral, also called "La Rotonda"), unique for its circular shape, the 17th-century "Duomo Nuovo" (New Cathedral) nearby, and the first-century Roman ruins at "Tempio Capitolino". Brescia is also famous for its lakes (Garda, Iseo and Idro) surrounded by mountains and vineyard-covered hills.

## How to reach University of Brescia

By air from these airports:

Milano Orio al Serio,  
Verona Villafranca,  
Milano Linate.  
Milano Malpensa

By car:

Highway A4, exit Brescia Ovest  
Highway A21, exit Brescia Centro

By train:

Brescia Railway Station

## How to reach DICATAM

The engineering school can be reached by Metro bound to Prealpino (Stop: Europa)

## Some Hotels around the university

Park Hotel Ca' Noa  
Hotel Impero  
Hotel Ambasciatori  
Hotel Regal  
Hotel Leonardo

Details at:

<https://bridgesummerschool2018.unibs.it/Venue.html>



UNIVERSITY  
OF BRESCIA



UNIVERSITY OF BRESCIA

DICATAM - Department of Civil, Environmental,  
Architectural Engineering and Mathematics

1<sup>st</sup> INTERNATIONAL SUMMER SCHOOL ON  
**Assessment and re-design  
of existing bridges.**  
BRESCIA, JULY 2-6, 2018



**Chairmen: Prof. Giovanni Plizzari  
and Prof. Fausto Minelli**

**Brescia, Italy  
July 2-6, 2018**

<https://bridgesummerschool2018.unibs.it/>

With the support of



## Aim and scope

There is a significant and growing need nowadays for the strengthening of existing reinforced concrete structures. Structural deterioration may have taken place, a change in use could result in more onerous loading, or requirements of design and loading Standards may change. In this context, new materials and techniques can provide cost effective solutions to both the design and implementation of strengthening measures.

It is well known that traffic volumes and loads can greatly increase during the life-span of an infrastructure. The infrastructure performance can fall under a warning level and a strengthening or repairing intervention become necessary. In other cases, the environmental conditions lead to a premature deterioration of the materials and a rapid intervention is needed as well. Moreover, some infrastructure elements were built before the seismic codes were available or before the seismic risk was recognized in the area of construction.

Deterioration of materials, higher traffic loads, seismic hazard are determining the need of defining innovative structural solution, novel analyses and retrofitting techniques for existing bridges.

Moreover, there is a stronger need than ever to grow researchers/practitioners that combine a robust academic foundation in structural analysis/conceptual design with practical experiences, technological expertise with awareness of the socio-economic impact in the field of existing infrastructures.

Hence, main goal of the Summer School is to offer innovative background, both analytical and practical, on structures and infrastructures, as well as laboratory experience.

## Who should attend

Engineering master students, graduate students, postdoctoral researchers, highway technical managers and practitioners willing to do research and applications in the field of bridges and infrastructures.

## Career opportunities

The school is a unique chance to meet peers, experts and practitioners in the field.

## Course outline

- Bridge typologies and their applications
- Time evolution of bridge loads
- Assessment of existing bridges: definition of structural deficiencies, evolution of exceptional loads worldwide, material degradation, seismic events, impacts
- Conceptual re-design of existing bridges
- Advanced rehabilitation methods for existing bridges
- First level evaluation of structural safety of existing bridges: diagnostics and monitoring (both in situ and remote)
- Second level (thorough assessment) of existing bridges
- Case study on an existing bridge

## International and National Lectures

**Hugo Corres Peiretti**, Full Professor, UPM, President of *fib*

**Marco Di Prisco**, Full Professor, Politecnico di Milano

**Ezio Giuriani**, Emeritus Professor, University of Brescia

**Giuseppe Mancini**, Full Professor, Politecnico di Torino

**Peter Mark**, Full Professor, Ruhr-University Bochum

**Aurelio Muttoni**, Full Professor, EPFL Lausanne



## Preliminary Course Schedule

Room: B.1.2. DICATAM

Via Branze 43, Brescia

### Monday July 2, 2018

08.30 – 09.00: Registration  
09.00 – 09.30 Plizzari: Course presentation  
09.30 – 10.30 Minelli: Experiences in the Province of Brescia  
11.00 – 13.00 Di Prisco: Collapse of Annone Bridge  
14.30 – 16.00 Mancini: Reliability of existing bridges  
16.20 – 17.50 Mancini: Reliability of existing bridges

### Tuesday July 3, 2018

08.40 – 10.40 Mancini: Assessment of existing bridges  
11.00 – 13.00 Mancini: A case study  
14.30 – 16.00 Muttoni: Critical aspects in existing bridges  
16.20 – 17.50 Muttoni: Critical aspects in existing bridges

### Wednesday July 4, 2018

08.40 – 10.40 Muttoni: Case studies on critical aspects  
11.00 – 13.00 Muttoni: Case studies on critical aspects  
14.30 – 16.00 Corres: Conceptual re-design for existing bridges  
16.20 – 17.50 Corres: Conceptual re-design for existing bridges

### Thursday July 5, 2018

08.40 – 10.40 Corres: Case studies of conceptual redesign  
11.00 – 13.00 Corres: Case studies of conceptual redesign  
14.00 – 16.30 Mark: German experience on bridge re-design  
16.50 – 17.50 Plizzari: New materials for bridge retrofitting

### Friday July 6, 2018

08.40 – 10.40 Giuriani: Problematichhe strutturali nei ponti  
11.00 – 13.00: Giuriani: Interventi di rinforzo strutturale  
14.30 – 17.30: Minelli: Esperienze nella Provincia di Brescia

*All lectures will be given in English, with the exception of those on Friday, July 6<sup>th</sup>, which will be in Italian.*