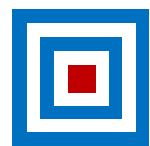


■ Why this course?

Offering high strength, light weight and excellent durability characteristics, in combination with ease of application, **FRP (Fibre Reinforced Polymer)** reinforcement has become a technique of increased popularity in the construction sector. Since the early 1990's commercial applications of strengthening with bonded FRP reinforcement and of FRP reinforced and prestressed concrete structures have been growing numerous. With a share of 17%, composites in construction have become one of the main sectors in the global composites market. Furthermore, FRP as non-traditional reinforcement has reached a broad status of recognition in the previous years and is entering mainstream design codes, such as fib Model Code 2010.

This course gives an excellent exposure on the design and application of FRP reinforcement in new construction and rehabilitation and is taught by international experts in this field. The aim of the course is to train participants with specific knowledge and skills, allowing them to consider, design and apply FRP reinforcement in a systematic way.



www.frpcourse.eu

Scientific coordination

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With the support of



23-27 January 2017 — Ghent University

Reinforcing and strengthening of structures with **FRP** reinforcement

Theory / Design / Lab experience



FRP TRAINING COURSE



THIRD EDITION



■ What to expect?

In this 5 days training course you will obtain theoretical and hands-on knowledge on the use of FRP reinforcement in construction. FRPs are non-metallic reinforcements with excellent engineering properties, to reinforce and prestress concrete elements or to strengthen existing structures. Their use as a sustainable and cost efficient solution has increased considerably over the years.

■ Who should attend?

This training course is intended for all industry and research professionals involved in FRP reinforcement for reinforcing concrete structures or for strengthening of existing structures.

- Engineers and designers in the public or private sector, involved in the design of concrete structures and/or the design of repair and strengthening (including seismic rehabilitation) of existing structures.
- Engineers at construction companies, material suppliers or research institutes with special interest into sustainable construction.
- Technical advisors of construction companies and control organisms.
- Professionals interested in the field of developing and applying advanced composites, and more specifically FRP reinforcement, in the construction sector.
- PhD students, scientists and teachers seeking specialist knowledge on the use and design of FRP reinforcement.

■ Teachers

Prof. Valter **Carvelli**, Politecnico di Milano, Italy

Dr. Christoph **Czaderski**, Empa, Switzerland

Prof. György **Balazs**, Budapest University of Technology and Economics, Hungary

Prof. Joaquim **Barros**, University of Minho, Portugal

Dr. Maurizio **Guadagnini**, University of Sheffield, United Kingdom

Prof. Renata **Kotynia**, University of Lodz, Poland

Prof. Stijn **Matthys**, Ghent University, Belgium

Prof. Lluís **Torres**, University of Girona, Spain

Prof. Thanasis **Triantafillou**, University of Patras, Greece

■ Practical information

Venue

The training school is taking place at the Magnel Laboratory for Concrete Research of Ghent University, Belgium.

Certificate of continued education

Participants attending the complete course and successfully completing the assignment, will receive an UGent certificate.

Course material

Hand-outs of the presentations during the course will be provided both in paper and digital format, along with other useful information. A dedicated web-based training course learning environment is available for the course participants.

E-learning

This training course will be video captured for e-learning purpose. Course participants will have full access to the e-learning modules.

MORE DETAILED INFORMATION & REGISTRATION: www.frpcourse.eu

■ Programme

Module 0 – Introduction to FRP materials

FRPs are increasingly used as structural material. In this module the basics of fiber reinforced polymer materials and their application will be discussed. This general introduction will be followed by a more detailed description of FRPs (micromechanics, constitutive materials and relationships).

Teachers: Stijn Matthys and György Balazs

Date: 23 January 2017

Module 1 – Training on FRP materials and FRP for Prestressed Concrete

In this module FRP reinforcement will be discussed in terms of bond behavior and material characterization. Laboratory work will be organized building FRP and adhesive materials, and practitioners will present some uses. During this module focus will also be given to use of FRP for prestressed concrete structures.

Teachers: Christoph Czaderski and Renata Kotynia

Date: 24 January 2017

Module 2 – Training on strengthening with FRP

Most applications of FRP reinforcement deal with the repair and strengthening of existing structures, eg. by means of externally bonded reinforcement. This is covered in this module in terms of flexural and shear strengthening and its design aspects, as well as confinement and seismic rehabilitation. As part of the teaching, cases or design examples will be given.

Teachers: Stijn Matthys, Joaquim Barros and Thanasis Triantafillou

Date: 25 January 2017

Module 3 – Training on internal FRP reinforcement

This module focusses on the use and design of FRP reinforcement for reinforced concrete structures. Amongst other, the serviceability and ultimate limit state of concrete is discussed. Similar to module 2, design example will be given as part of the teaching.

Teachers: Lluís Torres, Maurizio Guadagnini and Valter Carvelli

Date: 26 January 2017

Module 4 – Hands-on training on FRP behavior and technical visit

Participants will be able to verify their predictions by means of experimental tests. In addition a site visit will be organized.

Teachers: Stijn Matthys and Brenda Debbaut

Date: 27 January 2017

For more details see the FRP Course Information Package on the course website

■ Registration

Registration is mandatory through the course website. The registration fee includes hand-outs, lunches, coffee breaks, e-learning platform access and evening activities.

The number of participants is limited to 40.

Registration fee	Before 25 December	After 25 December
Participants	600 EUR	720 EUR
PhD students	420 EUR	540 EUR

fib/Endure/COST TU1207 members, PhD students and ie-net/BBG members obtain a discount of 75 EUR on the above prices. Financial support will be available for a limited number of participants through COST TU1207. Endure researchers attending the course are supported by their project budget. Financial support may also be offered by the doctoral school of your university. For further info on this and on cancellation conditions please see the course website.

MORE DETAILED INFORMATION & REGISTRATION: www.frpcourse.eu

