

COST

CURRENT POSITION

RILEM member/PhD-, MSc-students	600 euro
Postdocs (proof required)	850 euro
Professors/academic professionals	1600 euro
Professionals from industry	2000 euro

The cost includes:

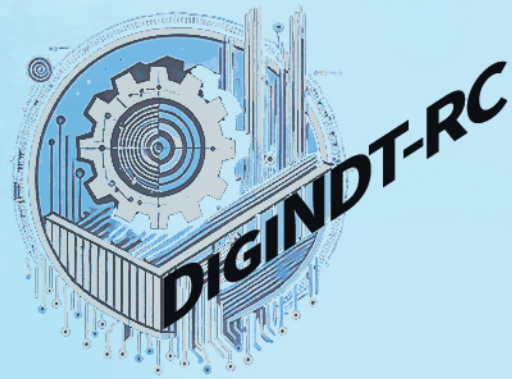
- Course material -> handouts
- Lunch, coffee and refreshments during the day

Registration and additional Information:

Further details regarding registration on the website soon:

www.tudelft.nl/citg/events-me

For any inquiries, please contact Iris Batterham (i.batterham@tudelft.nl)



AUTOMATION AND DIGITALISATION IN QUALITY CONTROL AND IN-SERVICE INSPECTION OF REINFORCED CONCRETE STRUCTURES



Join us for an intensive two-day training program focused on Automation and digitalisation in quality control and in-service inspection of reinforced concrete structures.

DATE: 10 - 11 JUNE, 2025

PLACE: TU DELFT, THE NETHERLANDS



Two-Day Training Program

What You'll Gain:

Cutting-edge knowledge in RC inspection, including the defects and degradation in RC, sensor technologies, digital twin technology, machine learning for SHM data analysis, and robotic inspections.

Practical Experience: Participate in lab sessions featuring state-of-the-art NDT methods such as Ultrasonic, acoustic emission monitoring, fibre optics, and thermography.

Industry Insights: Learn from real-world case studies on bridges, wind turbines, and large-scale infrastructure projects, providing context for practical implementation.

Networking Opportunities: Engage with industry professionals, researchers, and peers working at the forefront of construction technology.

Program Overview

Day 1: Fundamentals and Practical Insights

Morning Session

- ◆ Introduction to Quality Control in Reinforced Concrete (RC) Manufacturing (1.5h)
 - Defects in RC: Voids, Cracks, and Corrosion
 - Quality Control Techniques During Manufacturing
- ◆ Service Life Analysis of RC Structures (1.5h)
 - Mechanisms of RC Degradation
 - In-Service Performance Evaluation

Break

Midday Session

- ◆ Principles of NDT/SHM for RC Structures (2h)
 - Active and Passive Sensing Methods
 - Factors Affecting Sensor Performance

Lunch Break

Afternoon Session

- ◆ Modelling Defects in RC: From Theory to Practice (2h)
 - Computational Defect Modelling
 - Case Studies on Voids and Crack Propagation
- ◆ Laboratory Demonstrations (1.5h)
 - Hands-on: AE, Fiber Optics, and Thermography



Day 2: Advanced Techniques and Applications

Morning Session

- ◆ Digitalisation in NDT/SHM: Real-Time Monitoring (1.5h)
 - Digital Twins and BIM Integration
 - Inspection and Maintenance Automation
- ◆ Machine Learning for SHM Data Analysis (1.5h)
 - Data Fusion Techniques
 - AI-Driven Anomaly Detection

Break

Midday Session

- ◆ Automation in SHM: Robotics and UAVs (2h)
 - Autonomous Inspection Robotics
 - UAV Demonstrations and Pilot Trials

Lunch Break

Afternoon Session

- ◆ Industry Case Studies and Panel Discussion (2h)
 - Real-World Applications in Bridges and Wind Turbines
 - Expert Panel Q&A
- ◆ Closing Remarks and Feedback Session (1h)

