



# Decision support for service life extension with digital technologies

## Bridgitise Intermediate Training School

### SBU course on Reliability, risk, and decision analyses in built environment engineering

The Bridgitise Intermediate Training School is structured in two parts: preparation days with online lectures and exercises, followed by an in-person application-oriented project week. Participants work on real decision problems for bridge service life extension supported by digital tools, data, and probabilistic methods.

The Bridgitise Intermediate Training School will be co-organised with the Doctoral School on “Reliability, risk, and decision analyses in built environment engineering” of the Swedish Universities of the Built Environment (SBU).

**Focus:** Decision support for service life extension of bridges using digital technologies (monitoring, data-driven models, digital twins, decision tools).

**Target group:** Doctoral candidates and early-career researchers in structural engineering, infrastructure management, risk and reliability, and related fields.

**Format:** Online preparation days and an on-site project week at Lund University.

**Evaluation and ECTS points:** The attendees will form groups, work together on the project and submit a common report according to the guidelines disseminated in advance. The reports will be evaluated. 5 ECTS points will be awarded for Bridgitise students (as they work in larger cluster groups) and 7.5 ECTS will be awarded for SBU students upon successful completion.

All lectures will be recorded and made available via a dedicated website for later viewing.



## Preparation Days (Online)

**Dates:** 20–22 May 2026

**Format:** Online

The preparation days consist of three full days of lectures and exercises build a common foundation in probabilistic methods, structural system reliability, and decision analysis for infrastructure, as well as specialised Bridgitise topics.

Da	Date	Topic	Time	Format
1	20 May 2026	Probabilistic and digital data modelling Bridgitise topics: <a href="#">EDGE</a> and <a href="#">SATELLITE</a>	09:00–12:00 13:00–17:00	Lectures and exercises
2	21 May 2026	Structural system reliability Bridgitise topic <a href="#">D-BIM</a> , deterioration modelling	09:00–12:00 13:00–17:00	Lectures and exercises
3	22 May 2026	Risk and decision analysis Bridgitise topic <a href="#">CORROSION</a> , application examples	09:00–12:00 13:00–17:00	Lectures and exercises

## Project Week (On Site in Lund)

**Dates:** 9–12 June 2026

**Location:** Lund University, Lund, Sweden

The project week focuses on applied project work, lectures on Bridgitise cluster topics, and guest lectures from academia and industry. The Training School Dinner will be organised on Wednesday, June 10, 2026.

Date	Time	Format	Topic
Tue, June 9, 2026	09:00–11:00	Lectures and case studies	Bridgitise Cluster 1: Integrated digital twins and BIM platforms for intelligent and circular bridge lifecycle management
	11:00 – 12:00, 13:00 – 17:00	Project teamwork	
Wed, June 10, 2026	09:00–11:00	Lectures and case studies	Bridgitise Cluster 2: AI-enhanced monitoring with multi-modal sensing and data fusion for anomaly detection in integrity management of bridges
	11:00 – 12:00, 13:00 – 17:00	Project teamwork	
Thu, June 11, 2026	09:00–11:00	Lectures and case studies	Bridgitise Cluster 3: Cybersecure IoT and probabilistic risk-informed frameworks for multi-hazard bridge decision support
	11:00 – 12:00, 13:00 – 17:00	Project teamwork	
Fri, June 12, 2026	09:00–15:00	Presentations by project groups	Project presentations



## Project Work

Participants can either:

- 1) Choose their own research topic related to probabilistic modelling, structural reliability, risk and decision analysis, or digital lifecycle management of bridges, or
- 2) Work on a pre-designed case study: “Service life extension of a bridge using digital technologies”, including digital data and monitoring information models, and decision scenarios.
- 3) Bridgitise students will work on Bridgitise Cluster topics as defined in the previous research workshop.

Project work is carried out in small groups, supported by supervisors from the [Bridgitise](#) network.

## Lecturers

The lecturers include experts from the [Bridgitise Consortium](#) and external leading experts in the fields of digital data analytics, structural reliability and decision analysis.

## Local organising team

Prof. Sebastian Thöns ([sebastian.thons@kstr.lth.se](mailto:sebastian.thons@kstr.lth.se))

Ass. Prof. Leandro Iannacone ([leandro.iannacone@kstr.lth.se](mailto:leandro.iannacone@kstr.lth.se))

Hoang Nam Le ([hoangnam.le@polimi.it](mailto:hoangnam.le@polimi.it))

Sergio Castro ([sergio\\_andres.castro\\_giraldo@kstr.lth.se](mailto:sergio_andres.castro_giraldo@kstr.lth.se))

## Registration and contact

Please register [here](#) until May 15, 2026. For any questions, please reach out to the organising team.