

Reliability, risk, and decision analysis in built environment engineering

A course for consultants, industrial experts, postgraduate and PhD students organised by the Swedish Universities of the Built Environment (SBU) and the Joint Committee on Structural Safety (JCSS)



Course description

Methods of reliability, risk and decision analysis are highly important to ensure a safe, economically efficient and sustainable built environment. This course aims at educating engineers and researchers to utilize and master reliability, risk and decision analyses to supporting decision makers and clients.

The course encompasses (1) probabilistic modelling, (2) reliability analysis and adaptation with structural health information (3) in conjunction with risk and decision analysis. This theoretical background is exemplified with applications providing insight to actual research and industrial applications. The course contents include:

- Probabilistic concepts and methods
- Reliability analysis methods, load and resistance modeling
- System and time-dependent reliability
- Structural health information modelling and analysis
- Risk assessment methods
- Decision analysis and decision value analysis
- Partial safety factor calibration
- Evaluation of existing structures
- Applications in research and practice

The course contents and course work is equivalent to 7.5 ECTS points.

Dates and venue

Block 1: April 5-7, 2022 and Block 2: May 3-5, 2022 at Lund University, Sweden.

Lecturers

Assoc. Prof. Ivar Björnsson, Lund University, Sweden (Course organiser)

Prof. Sebastian Thöns, Lund University, Sweden

Dr. Matthias Schubert (Matrisk, Zurich, Switzerland)

Guest lecturers

Who should attend?

The course is designed for post-graduate students and professionals. A MSc degree in Civil Engineering or equivalent is recommended.

To sign up for the course or for more information, please contact Ivar Björnsson, ivar.bjornsson@kstr.lth.se or Sebastian Thöns, sebastian.thons@kstr.lth.se.

The deadline for applying to the course is 25 March, 2022. The course is free for PhD students from the Swedish Building University (SBU) – i.e. Chalmers, KTH, LTU and LTH. A fee of 5000 SEK is required from other PhD students and 15 000 SEK from consultants and industrial experts.