



# AF2211 Operation and Maintenance of Bridge and Tunnels, LCC and LCA 7.5 credits

Drift och underhåll av broar och tunnlar, LCC och LCA

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

## Establishment

Course syllabus for AF2211 valid from Autumn 2009

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

Second cycle

## Main field of study

Built Environment

## Specific prerequisites

Academic degree in civil engineering (BSc or higher) including basic courses on structures, bridges and tunnels.

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

- Additional knowledge on systems for planning and operation of maintenance of infrastructures.
- Information about practical systems for management of structures.
- Basic knowledge on Life Cycle Cost (LCC) and Life Cycle Assessment (LCA) analysis for infrastructures.
- Examples on how to use enhanced methods for operation and management of structures using monitoring.

## Course contents

The course will be given in two concentrated blocks during November 2009 and January 2010. Each block consists of 3 to 4 days. Lectures and presentations will be given in English or Swedish depending on the attendees. Apart from the scheduled teaching, the participants are expected to do independent home work in the form of a field study of two structures (i.e. a bridge, a tunnel, a road or a railway stretch). The field study including planning of maintenance, LCC-analysis and LCA-analysis is presented orally and in a written paper seminar.

## Course literature

Reports presented in the ETSI Nordic joint research project, textbooks in Swedish on maintenance and handouts.

## Examination

- NÄR1 - Attendance, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO1 - Project, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercises, 1.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

PRO1, 3 hp, approved written paper presented in seminar

ÖVN1, 1.5 hp, approved exercises

NÄR1, 3 hp, attendance in the course

## Other requirements for final grade

All examination moments should be passed.

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.