AF2202 Bridge Design, Advanced Course 6.0 credits

Bridge Design, Advanced Course

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

Establishment

Course syllabus for AF2202 valid from Autumn 2010

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

180 credits academic studies in Engineering, Science, Economics or Planning and documented proficiency in English B or equivalent (TOEFL, IELTS e g).

AF2201 Bridge Design

Language of instruction

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

Intended learning outcomes

The aim of this course is to give advanced knowledge on analysis and design of bridges. After this course, the student will be able to:

— Understand the concept and application of FEM for bridge analysis

— Use the commercial FE program LUSAS to model bridges in 3D

— Consider fatigue in design according to the Eurocode (EC3)

— Describe methods for bridge repair

— Calculate life-cycle-costs of bridges

— Analyse and design slab frame bridges

Course contents

— The finite element method for bridge analysis

— FEM modelling

— Fatigue analysis

— Life-cycle-cost analysis

— Repair and maintenance of bridges

— Bridge construction methods

Design and analysis of a slab frame bridge is included in the course as a project task.

Including part of AF2019

Examination

- PRO1 - Project, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercises, 2.0 credits, grading scale: P, 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.

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

ÖVN1 (Exercises 2 ECTS credits)

PRO 1 Project (4 ECTS credits)

Other requirements for final grade

Passed exercises (2 ECTS credits)

Approved project task (4 ECTS credits)

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.