AF1747 Structural Engineering 2 7.5 credits

Konstruktionsteknik 2

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

Establishment

The course syllabus is valid from Autumn 2025 according to decision of Director of First and Second Cycle Education: HS-2025-0582, 3.2.2.Decision date: 2025-03-17

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Completed courses: AF1763, AF1734

Course registration: AF1737, AF1744, AF1745

Language of instruction

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

Intended learning outcomes

After passing the course, the students should be able to:

- suggest adequate load combinations for the design of concrete in the ultimate limit state
- determine critical loads with respect to flexural buckling for concrete beams under linear elastic conditions
- verify the load-carrying capacity of concrete subjected to plane bending in the ultimate limit state
- calculate the load-carrying capacity of commonly used foundation types in building and civil engineering construction
- optimise structural components for reduced environmental impact and increased durability.

Course contents

- Load-carrying capacity of concrete beams subjected to plane bending in the ultimate limit state
- Behaviour and calculation of the load-carrying capacity of common foundation types in building and civil engineering
- Behaviour of hybrid structures
- Optimisation of structural components for reduced environmental impact and increased sustainability

Examination

- ÖVN1 - Exercises, 1.5 credits, grading scale: P, F
- ÖVN2 - Exercises, 1.0 credits, grading scale: P, F
- TEN1 - Written exam, 5.0 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.

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

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.