# AF1767 Structural Engineering 1 7.5 credits

**Konstruktionsteknik 1**

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

## Establishment

The official course syllabus is valid from autumn semester 2026 as decided by the Director of First and Second Cycle Education. Decision date: 2026-03-31

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

Completed courses:

AF1763 Mathematics 1, Linear Algebra 5.0 credits and AF1734 Structural mechanics 1 5.0 credits

## Intended learning outcomes

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

- suggest adequate load combinations for design in the ultimate and serviceability limit states for steel and timber structures
- determine critical loads considering flexural buckling for beams in the elastic region
- verify the design resistance for steel and timber subjected to bending in the ultimate limit state
- minimize the material consumption for structural members for decreased environmental impact and increased sustainability.

## Course contents

- Load combinations for design in the ultimate and serviceability limit states.
- Critical loads considering flexural buckling for beams in the elastic region.
- Design resistance for steel and timber beams subjected to bending in the ultimate limit state.
- Material consumption for structural members for decreased environmental impact and increased sustainability.

## Examination

- ÖVN1 - Excercises, 0.5 credits, grading scale: P, F
- ÖVN2 - Excercises, 1.5 credits, grading scale: P, F
- ÖVN3 - Excercises, 1.5 credits, grading scale: P, F
- TEN1 - Written exam, 4.0 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.