AF1735 Structural mechanics 2 with load analysis 7.5 credits

Byggnadsmekanik 2 och lastanalys

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

Establishment

The course syllabus is valid from spring term 2021.

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Language of instruction

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

Intended learning outcomes

After completing the course students shall be able to calculate the shear stresses in beams, draw NVM diagram for statically determinate frames and sloping beams, analyse simple statically undeterminate beams and calculate the critical load for columns with different boundary conditions. Students shall also be able to calculate characteristic loads and design loads in ultimate state for simple constructions.

Course contents

- Shear stresses in beams
- Torsion of circular bars
- Statically determinate frames and sloping beams
- Statically indeterminate beams - flexibility method
- Buckling of columns
- Qualitative analysis of beams and frames
- Loading conditions
- Characteristic values for selfweight, imposed load, snow load and wind load
- Calculation of the design load in the ultimate limit state
- Optimization of structures in order to achieve increased sustainability

Examination

- INL1 - Thesis proposals, 1.0 credits, grading scale: P, F
- INL2 - Thesis proposals, 0.5 credits, grading scale: P, F
- TEN2 - Written exam, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Written examination, 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.