SD2416 Structural Optimisation and Sandwich Design 6.0 credits

Strukturoptimering och sandwichdesign

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

Establishment

Course syllabus for SD2416 valid from Autumn 2021

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

Completed degree project on Bachelor level with major in technology.

Completed course that has provided knowledge equivalent to the content of the basic course in Solid Mechanics SE1010.

Language of instruction

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

Intended learning outcomes

Upon completion of the course, the student should be able to:

- design sandwich beams and isotropic sandwich plates subjected to common load conditions.
- use simple optimisation methods with and without constraints.
- formulate a problem from structural mechanics as an optimisation problem and solve it.
- describe finite elements for sandwich structures.

Course contents

Basic beam and plate theory for sandwich structures. Design of sandwich structures regarding stiffness and strength. Basic structural optimisation applied to sandwich structures. Finite element modeling, manufacturing aspects, sustainability aspects for sandwich structures. Laboration and programming and desing task.

Examination

- LAB1 - Laboratory Work, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN2 - Examination, 3.0 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.

Other requirements for final grade

None.

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.