SE2128 Computational Material Mechanics 7.5 credits

Beräkningsteknisk materialmekanik

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

Establishment

Course syllabus for SE2128 valid from Spring 2011

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

The students should have acquired knowledge that is equivalent to the basic courses
SE1010 Hållfasthetslära gkMPT
SE1020 Hållfasthetslära gkBD
SE1055 Hållfasthetslära gkF

and the courses
SE1025 FEM for engineering applications
SE2126 Material mechanics.

Language of instruction

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

Intended learning outcomes

The overall purpose of the course is that the student should get a thorough understanding of the numerical implantation of FEM and the analysis methods that are available in FEM.

After the course the student should be able to

- implement new material models in commercial FE codes like Ansys, Abaqus, etc
- implement time dependent material models in an FE code

Course contents

The course consists of lectures, homework assignments, and seminars. In the lectures, the theory for the different topics is presented, including the numerical structure for implantation of material models in commercial FE codes. In the homework assignments, the students will perform a numerical implementation of the different parts using Matlab. The students will then present their results to each another in a seminar.

Disposition

The course contains a few lectures and a number of home assignments.

Course literature

Lecture notes

Examination

- BER1 - Computational Assignments, 7.5 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.

Oral and individual report of the project.

Other requirements for final grade

Passed homework assignments
Passed oral project report

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.