KF2110 Mechanical Properties of Materials 7.5 credits

Materials mekaniska egenskaper

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

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

Establishment

Course syllabus for KF2110 valid from Autumn 2023

Grading scale

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

Education cycle

Second cycle

Main field of study

Chemical Science and Engineering,Chemistry and Chemical Engineering

Specific prerequisites

Bachelor's degree in engineering or in sciences including 50 credits in chemistry or chemical engineering. English B/6.

Language of instruction

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

Intended learning outcomes

After graduating from the course the students should be able to:

- solve mechanical problems related to the concepts: stress, strain, force balance and moment
- describe how mechanical measurements are made and how mechanical data is obtained
- describe the mechanical behavior of different material groups (including metals, ceramics, elastomers, polymers, composites)

Course contents

Basic continuum mechanics, stress, strain, force balance and moment, constitutive relationships for different material classes (elastic, viscoelastic and viscous materials), time- and temperature dependence of viscoelastic materials, fracture mechanics, molecular and structural aspects on mechanical properties of materials, measurement techniques.

Examination

- LAB1 - Laboratory Work, 1.5 credits, grading scale: P, F
- TEN1 - Written exam, 6.0 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.

Other requirements for final grade

Active participation in all compulsory activities as specified in Course information.

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.