KF2330 Concepts of Materials 7.5 credits

Concepts of Materials

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 KF2330 valid from Autumn 2019

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

Language of instruction

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

Intended learning outcomes

You should be able to:

- describe the structure of metals, ceramics, polymers and fiber based materials.
- describe the properties (strength, shear, compression, corrosion resistance and degradation) characterizing metals, ceramics, polymers and fiber based materials.
- reflect on choice of materials for certain applications/final products
- describe recovery processes for the most common materials
- describe the most common testing methods for materials

Course contents

An advanced overview of materials used in engineering-metals, ceramics, polymers and fiber based materials. Examines microstructure of materials and macroscopic properties such as modulus of elasticity and tensile and shear strengths. Topics such as phase diagrams, solid state transformations, fracture, corrosion and sizing are included. Some laboratory demonstrations.

Examination

- LAB1 - Laboratory Work, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercises, 2.0 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.

Other requirements for final grade

Written examination 4 credits.
Projekt lab (report + seminar) 1.5 credits
Tutorials 2 credits

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.