AF1003 Material and Water Chemistry 7.5 credits

Material- och miljökemi

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

Establishment

Course syllabus for AF1003 valid from Autumn 2007

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Natural Resources Theory

Language of instruction

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

Intended learning outcomes

After the course is completed the student shall be able to:

- Understand chemical processes in water and the factors that influence water quality
- Describe polymer materials, wood, mortar and concrete and metals, and processes that influence durability of these materials.
- Evaluate how a certain water quality may influence durability of a steel or concrete structure.

Course contents

Dissolved substances in water.

Chemical equilibrium, acids, bases, solubility of minerals.

Soil and water pollution.

Properties of materials.

Carbon-based materials: Asphalt, plastics wood.

Calcium-based materials and other mineral materials.

Metals: Materials and corrosion processes.

Course literature

- Burström P.G., Byggnadsmaterial, Studentlitteratur , Lund.
- Gustafsson, J.P., Jacks, G., Simonsson, M. & Nilsson, I. 2005. Soil and water chemistry. Compendium.
- Compendium for laboratory and excercise work.

Examination

- ÖVN1 - Exercises, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 4.5 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.

Other requirements for final grade

Approved laboratory work (LAB1; 3 cr)
Examination (TEN1; 4,5 cr)

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.