



AE1105 Environmental Soil Chemistry 7.5 credits

Miljö- och markkemi

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 AE1105 valid from Autumn 2011

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Basic university entrance incl. Swedish B and AI1137 Planning Process, SH1010 Physics of the Built Environment, Geology and geo-AE1102, AE1101 Natural Resources Engineering, or courses with similar content.

Language of instruction

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

Intended learning outcomes

After the course the student should be able to

- * Understand chemical processes in soils and waters, and the factors affecting the runoff water quality
- * Assess the mobility of various contaminants in soils and waters
- * Plan sampling, interpret chemical analyses

Course contents

- * Dissolved substances in waters: sources, water chemical analysis, variability, charge balance
- * Chemical equilibrium: acids and bases, solubility of minerals, complexation
- * Soils in Sweden, and soil chemical properties
- * Adsorption of substances to the particle surfaces
- * Contaminants in soils and waters
- * Models for simulation of the behavior of substances in soil and water

Disposition

- Lectures
- Water chemistry laboratory
- Project on one specific soil. This includes: soil profile description in the field, soil chemistry laboratory.

Course literature

Gustafsson, J.P., Jacks, G., Simonsson, M., Nilsson, I. 2008. Mark- och vattenkemi. Teori. Exercise compendium.

Examination

- PRO1 - Project, 2.0 credits, grading scale: A, B, C, D, E, FX, F

- TEN1 - Examination, 3.5 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Assignments, 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.

Written examination (TEN1, 3.5 credits)

Assignments and laboratory report (ÖVN1; 2 credits)

Expression of the project (written report + oral presentation) (PRO1; 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.