



KD2120 Atmosphere, Aquatic and Terrestrial Chemistry 7.5 credits

Atmosfär, vatten och markkemi

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

Establishment

Course syllabus for KD2120 valid from Autumn 2007

Grading scale

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

Education cycle

Second cycle

Main field of study

Chemistry and Chemical Engineering

Specific prerequisites

Basic course in chemistry at university level, or corresponding knowledge.

Language of instruction

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

Intended learning outcomes

After completed course the student shall be able to:

- Define, describe and use chemical processes in an aquatic environment
- Use mathematical models for transport, equilibrium, kinetics and exchange between two phases.
- Describe the chemistry of the atmosphere.
- List the most important soil processes.
- Apply the knowledge on natural and technical systems
- Evaluate and use scientific reports in water chemistry
- Plan and perform an investigation of an aquatic system
- Report the results of an investigation.

Course contents

The theoretical part includes a description of aqueous environments using equilibria, kinetic or transport models. Acid-base equilibria are related to the carbon dioxide cycle and to acidification problems. Redox equilibria are used in order to describe aerobic and anaerobic environments in natural waters. The relation between solid phases, water and air is discussed in connection to weathering and mineralizing processes. The biogeochemical cycle is described using box-models.

Course literature

Gary W Van Loon, Stephen J Duffy Environmental Chemistry – A Global Perspective, Oxford University Press (2000)

2. Handouts.

Examination

- INL1 - Assignment, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- ANN1 - Assignment, 1.5 credits, grading scale: P, F
- LAB1 - Laboratory Work, 1.5 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.

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

Other requirements for final grade

Assignment, ANN1; 1,5 cr

Assignment, INL1; 1,5 cr

Laboratory work, LAB1; 1,5 cr

Examination, TEN1; 3 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.