KD1510 Chemical Equilibrium 6.0 credits

Kemisk jämviktslära

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

Establishment

Course syllabus for KD1510 valid from Spring 2019

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Completion of upper-secondary school by 1 July 2011 and adult education at the upper-secondary level (gymnasium) by 1 July 2012 Specific entry requirements: mathematics E, physics B and chemistry A. Passed or 3 in each of the subjects is required.

Upper-secondary school from 1 July 2011 and adult education at upper-secondary level (gymnasium) from 1 July 2012 (Gy2011) Specific entry requirements: Physics 2, Chemistry 1 and Mathematics 4. A pass in each of the subjects is the lowest acceptable grade.

Language of instruction

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

Intended learning outcomes

On completion of the course, the student should be able to:

1. Calculate different types of chemical equilibrium equations with appropriate approximations and predict how the equilibrium concept can be utilized to influence a process (TEN1).
2. Independently plan and perform wet chemical work in accordance with standard procedures for safe handling of chemicals and apply the equilibrium concept for analysis and separation (LAB1).
3. Identify natural forms of our most common elements in soil, water and air, and based on the principles of equilibrium describe flows and circles in nature (TEN1).

Course contents

The course focuses on equilibrium calculations of acid / base, gas, solubility, complex and redox reactions and practical wet chemical laboratory work in inorganic reaction theory. The course aims to give a general understanding of how the driving forces in nature, i.e. how the strive towards equilibrium, give rise to chemical reactions and how we can practically utilize this concept to influence a reaction.

Course literature

1. Burrows, Holman, Parsons, and Pilling, Chemistry3, Oxford,

2. Collected works in chemical equilibrium

3. Supervision in the practical aspects of chemical equilibria

Examination

- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Exercises, 3.0 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.

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

Other requirements for final grade

All parts in the course should be approved

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.