KD1130 Inorganic Chemistry 6.0 credits

Oorganisk kemi

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 KD1130 valid from Spring 2014

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

The requirements in mathematics, physics and chemistry correspond to Mathematics E, Physics B and Chemistry A.

Language of instruction

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

Intended learning outcomes

Upon successful completion of the course a student should be able to:

- correctly write synthetic pathways to prepare common inorganic materials, molecules, and clusters;
- correctly write reaction mechanisms for homogeneous and heterogeneous catalysts;
- derive periodic trends in inorganic reaction chemistry;
- use ligand field theory to predict reactivity of transition metal coordination complexes;
- and describe characterization methods for inorganic materials, molecules, and clusters.

Course contents

The course has a theory section (4 credits) and experimental section (2 credits).

The theory section focuses on:

- systematic inorganic chemistry from the entire periodic table;
- inorganic synthesis of materials, coordination complexes, and clusters;
- the use of ligand field theory on transition metals;
- common characterization techniques in inorganic molecules and materials;
- solid-state synthesis;
- the photochemistry of inorganic molecules and semiconductors;
- and reaction mechanisms for heterogeneous and homogenous inorganic catalysts.

The experimental section includes two labs, the Wilkinson's catalyst (Lab 1) and Dye-sensitized solar cell (Lab 2)

Course literature

Material delas ut under kursens gång.

Examination

- LAB2 - Laboratory Work, 2.0 credits, grading scale: P, F
- TEN2 - Examination, 4.0 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.

Other requirements for final grade

Examination (TEN: 4 credits)
Laboratory work (LAB: 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.