KD2160 Structural Chemistry 7.5 credits

Strukturkemi

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

Establishment

Course syllabus for KD2160 valid from Autumn 2007

Grading scale

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

Education cycle

Second cycle

Main field of study

Chemical Science and Engineering, Chemistry and Chemical Engineering

Specific prerequisites

Three years of study at the School of Chemistry, Chemical Engineering and Biotechnology, KTH, or equivalent.

Language of instruction

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

Intended learning outcomes

To give an introduction to the structural chemistry of organic and inorganic compounds. To understand how the structures are influenced by the geometry of their building blocks. To understand how complicated structure types can be built starting from simple structural principles. To understand and to be able to explain the relationships between different structure types. To be able to explain the properties of solid compounds starting out from their structure

Course contents

The crystalline state and description of crystal structuresIonic radii and simple ionic structuresThe VSEPR model and structures of compounds of the main-group elementstransition metals and lignad field theorystructures of non-metallic elementspolyanionic and polycationic structuresclose packings and metal structuresstructures of molecular compoundsstructures of polymeric compoundsphysical properties of solid compoundssymmetry as a ordering principle in solid phasesstructure determination: diffraction methodsstructure determination: spectroscopic methods

Course literature

Anthony R. West: Basic Solid State Chemistry, 2nd edition, Wiley, 2000.

Examination

- PRO1 - Project, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Course, 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

Written examination, 4,5 credits.
Completed laboratory course, 1,5 credit.
Project, 1,5 credit.

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.