KD1020 Introductory Chemistry 6.0 credits

Inledande kemi

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

Establishment

Course syllabus for KD1020 valid from Autumn 2020

Grading scale

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

Education cycle

First cycle

Main field of study

Chemistry and Chemical Engineering, Technology

Specific prerequisites

Language of instruction

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

Intended learning outcomes

After completing the course the student should be able to

- explain and use the relationships between the electronic structure of atoms, chemical bonding, the periodic table and the physical and chemical properties of the elements.
- balance chemical equations and perform stoichiometric calculations.
- explain the relationships between molecular properties and thermochemistry and perform thermochemical calculations.
- describe instrumental methods in modern chemistry.
- perform and plan basic chemical laboratory work with consideration of the work environment and safety regulations.

in order to

- provide a scientific base for further studies in chemistry and biotechnology
- learn the scientific fundament for calculations in sustainable development, such as life cycle analyzes, energy analyzes, and climate impact analyzes
- be able to identify and address problems related to chemistry, the properties of chemicals and the environmental impact of chemicals in the work place.

Course contents

The objective of the course is to give an overview of the different areas of chemistry, including

- chemical equations, stochiometry and termochemistry;
- an overview of instrumental methods in modern chemistry, e.g. chromatograpy, spectroscopy and diffraction methods;
- an orientation into the theoretical foundation of chemistry, i.e. chemical bonding, chemical equilibrium, reactivity;
- practical labratory skills, labratory work environment, safety regulations, chemical analysis and synthesis

Examination

- TEN1 - Written exam, 4.5 credits, grading scale: A, B, C, D, E, FX, 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.

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.