KH1122 Analytical Chemistry 7.5 credits

Analytisk kemi

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

Establishment

Course syllabus for KH1122 valid from Spring 2016

Grading scale

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

Education cycle

First cycle

Main field of study

Chemistry and Chemical Engineering, Technology

Specific prerequisites

Completed upper secondary education including documented proficiency in Swedish corresponding to Swedish B and English corresponding to English A.

Completion of upper-secondary school from 1 July 2011 and adult education at upper-secondary level from 1 July 2012 (Gy2011)

General entry requirements and Specific entry requirements: Physics 2, Chemistry 1 and Mathematics 3c. A pass in each of the subjects is the lowest acceptable grade.

Completion of upper-secondary school before 1 July 2011 and adult education at upper-secondary level before 1 July 2012

General entry requirements and specific entry requirements: Mathematics D, Physics B and Chemistry A. The grade Passed or 3 in each of the subjects is required.

Language of instruction

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

Intended learning outcomes

The general aim of this course is to give theoretical and practical knowledge concerning both fundamental analytical chemistry, and modern chemical measurement techniques.

When you have passed the course you will be able to:

- Perform fundamental chemical analyses within the areas of wet chemistry, potentiometry, spectroscopy and gas chromatography and describe how to carry out these methods.
- Describe the fundamental principles for the methods, which problems can appear, and how to handle these problems.
- Explain causes of error in analyses and properly estimate these errors through the process of handling data and using statistics.
- Perform calibrations and calculations that are related to the quantitative chemical analysis.
- Describe the problem of sampling and the contribution of this problem to the final measurement.
- Describe how to process the sample prior to analysis in terms of dissolving and handling of interferences
- Write your own lab reports that describe the analysis, calculations, results and experimental errors
- Describe the techniques used and the analysis performed at different companies or other activities in the community

Course contents

Sampling.
Quantitative analytical chemistry including applications.
Gravimetry.
Titrimetry.
Electrochemical measuring methods.
Chromatographical methods.
Spectrometrical methods.

Course literature

Daniel C. Harris “Quantitative Chemical Analysis”, Freeman and Company, nionde upplagan 2016 (ISBN-13: 978-1-4641-3538-5).

Examination

- TEN1 - Written examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Lab-Work, 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

Passed examination (TEN1; 4,5 cr.).
Passed lab sessions (LAB1; 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.