



# KH1324 Analytical Chemistry 2

## 7.5 credits

### Analytisk kemi 2

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 KH1324 valid from Autumn 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

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

- Plan how to appropriately sample in different environments and describe the varying problems due to sampling, as well as suggest how to solve them.
- Explain the principles of modern analytical instruments commonly used today within chromatography, spectroscopy and electro-chemistry.
- Handle and demonstrate some of these instruments.
- Choose and apply suitable calibration models and models and suggest how a calibration can be improved to provide more reliable results.
- By using the computer, treat measuring data with statistical methods.
- Give examples of quality systems and describe how to validate analytical methods.
- Construct and use different control charts.
- Develop and validate an analytical method for a given problem.
- Describe what process analytical chemistry is and know its difference from conventional analysis.
- Conduct a risk assessment with respect to the chemicals used in the lab by using a computer program.
- Explain how analytical chemistry can be used as a tool in sustainable development.

## Course contents

Quality, validation, environmental analytical technique, and sampling problems. Process analytical methods and instrumental analytical methods within chromatography and spectroscopy. Computer based treatment of data.

## Course literature

Harris, D C: Quantitative Chemical Analysis 9th ed, Freeman & Co.

## Examination

- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, F
- TEN1 - Written examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Computer 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.

## Other requirements for final grade

Passed examination (TEN1; 3 credits)

Passed account of lab project (LAB1; 3 credits) passed computer exercises (ÖVN1; 1,5 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.