Analytical Chemistry T

Programme course

6 credits

Analytisk kemi T

NKEB05

Valid from: 2017 Spring semester

Determined by
Board of Studies for Chemistry, Biology and Biotechnology

Date determined
2017-01-25

Main field of study
Chemical Engineering, Chemistry

Course level
First cycle

Advancement level
G1X

Course offered for
- Chemistry, Bachelor´s Programme
- Chemical Analysis Engineering, B Sc in Engineering

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
General Chemistry, Organic Chemistry, Inorganic Chemistry and Calculation tools for chemistry students

Intended learning outcomes
The aim of the course is to give fundamental theoretical and practical knowledge in the field of volumetric analysis (titrations). After completing this course the student should be able to:

- Explain the chemical principles of volumetric analyses.
- Plan, perform and evaluate chemical analyses based on titrations.
- Write reaction equations and perform calculations for volumetric analyses.
- Calculate and analyse titration curves.
- Construct logaritmic pH diagrams and use these to describe acid-base titration equilibria.

Course content
General aspects of analytical chemistry. Acid-base equilibria and pH graphs (logarithmic diagrams). Quantitative chemical analysis based on volumetric methods: acid-base, redox, complexometric and precipitation titrations – theory and applied laborations where authentic samples are analysed. Titrations with indicators and potentiometric titrations. Experimental errors.

Teaching and working methods

The course consists of lectures, lessons, laborations, computer exercises and short written tests. The laborations and computer exercises are compulsory.

Examination

LAB1	Laboratory work	3 credits	U, G
TEN1	Written examination	3 credits	U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information

Supplementary courses: Analytical chemistry S, Analytical chemistry K and Organic Analytical Chemistry

Department

Institutionen för fysik, kemi och biologi

Director of Studies or equivalent

Magdalena Svensson

Examiner

Johan Dahlén

Course website and other links

Education components

Preliminary scheduled hours: 94 h
Recommended self-study hours: 66 h

Course literature

Harris D.C., Quantitative Chemical Analysis, 8th ed., Freeman, 2010.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.