Application Areas to Chemical Analysis Engineering

Programme course

6 credits

Tillämpningsområden för kemisk analysteknik

TFKI16

Valid from: 2017 Spring semester

Determined by
Board of Studies for Chemistry, Biology and Biotechnology

Date determined
2017-01-25

Offered for the last time
Autumn semester 2024

Replaced by
TFIK93

Main field of study
Chemical Engineering

Course level
First cycle

Advancement level
G1F

Course offered for
- 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
Introduction to analytical Chemistry, Engineering project

Intended learning outcomes
The course shall exemplify and present different fields and areas in Chemical Analysis Engineering. By analyzing an analytical problem coupled to the presented fields, students working in groups will get in-depth knowledge which they will present in written and oral form. After the course, students will:

- be able to organize and present information
- be able to evaluate oral communication
- be able to describe the different areas of Chemical Analysis Engineering, together with concrete industrial examples
- be able to produce an in-depth technical report for an analytical problem, building upon their knowledge of report writing and presentation skills
- describe and use basic ethical theories, principles and concepts to analyze ethical problems in natural sciences and technology.
- explain the importance of professional responsibility.

Course content
An overview and in-depth view of different areas of analytical chemistry will be presented for both small and large companies. Forensic analyses. Environmental analyses. Pharmaceutical analyses. Medical applications. Process analyses. Oral and written presentation skills. Ethical aspects in natural science and technology.

Teaching and working methods

The course will illustrate industrial applications of Chemical Analysis Engineering. Examples will be included in forensic studies and environmental science.. The course consists of lectures, seminars and project work.
The course runs the entire autumn semester, and a literature project will be mixed with lectures, presentations of companies and exercises in communication and presentation techniques and lectures and seminars in ethics. Both individual and groupwise oral presentation is included in the course.

Examination

UPG1	Group assignment	2 credits	U, G
PRA5	Oral presentation	1 credits	U, G
PRA4	Project	3 credits	U, G

Grades are given as ’Fail’ or 'Pass’.

Grades

Two-grade scale, U, G

Department

Institutionen för fysik, kemi och biologi

Director of Studies or equivalent

Magdalena Svensson

Examiner

Maria Lundqvist

Education components

Preliminary scheduled hours: 46 h
Recommended self-study hours: 114 h

Course literature

Additional literature

Other

Materials from presentations, literature provided by the teachers and relevant literature found by the students in literature searches.

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.