



**LUND**  
UNIVERSITY

Faculty of Science

## **KEMK10, Chemistry: Bachelor's Degree Project, 15 credits**

*Kemi: Examensarbete för kandidatexamen, 15 högskolepoäng*

First Cycle / Grundnivå

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### **Details of approval**

The syllabus was approved by Study programmes board, Faculty of Science on 2019-01-17 to be valid from 2019-01-17, autumn semester 2019.

### **General Information**

The course is a compulsory first-cycle component of a degree of Bachelor of Science in Chemistry (see also the section "Further information").

The degree project is to be carried out in one of the following specialisations.

- Organic Chemistry
- Inorganic Chemistry
- Biochemistry
- Molecular Biophysics
- Analytical Chemistry
- Physical Chemistry
- Theoretical Chemistry
- Chemical Physics

*Language of instruction:* Swedish and English

The language of instruction is English, but it can be altered to Swedish due to the nature of the project and if the student is Swedish-speaking.

*Main field of studies*

Chemistry

*Depth of study relative to the degree requirements*

G2E, First cycle, has at least 60 credits in first-cycle course/s as entry requirements, contains degree project for BA/BSc

## Learning outcomes

The aim of the degree project is to enable students to acquire specialised and additional knowledge in a subject-specific subarea and to practise using chemical research methods and their ability to independently complete minor research projects.

### Knowledge and understanding

On completion of the course, the students shall be able to

- demonstrate subject knowledge and account in detail for the current state of knowledge in the subject area
- account for the applicable methods within the subject area and for their possibilities and limitations

### Competence and skills

On completion of the course, the students shall be able to

- use literature or other information searches to independently collect, compile and assimilate the information required to process an issue scientifically
- execute a minor laboratory and/or theoretical research project independently and within a predetermined time frame
- demonstrate sound methodological, experimental and theoretical skills in relation to the issue
- document, analyse and compile the results obtained, and discuss them from a broader perspective
- present a scientific project orally and in writing, including issue, methods and results, for both intradisciplinary and popular science purposes

### Judgement and approach

On completion of the course, the students shall be able to

- interpret and assess the results obtained in order to perform both troubleshooting and appropriate control experiments during the process
- relate the issue and results to applicable scientific, societal and ethical aspects
- critically analyse published articles in the research area of the project
- assess their need for knowledge and take responsibility for their ongoing learning within the subject area

## Course content

The focus and design of the degree project are to be determined in consultation with the supervisor. The focus can be within one of the specialisations of chemistry listed in the section "General information" above. The project is to include literature studies mapping the background of the chosen topic and laboratory work and/or theoretical tasks. The student is to execute the project independently with some supervision, including data collection and continuous documentation as well as compilation, analysis and evaluation of the results obtained.

## Course design

The course is implemented as a project planned in consultation with a supervisor having experience in the chosen subject area. The project can be conducted at one of the divisions of the Department of Chemistry or, subject to an agreement with the examiner, at another academic department or outside the University. It is the responsibility of the student to contact a research team or equivalent in order to find a suitable project and supervisor. The project is to be conducted under supervision, but with independence. The practical work is to be documented in detail and in accordance with the procedures of the workplace.

The student is to write a scientific report including a scientific abstract and a popular science description in Swedish or English. The project is to be presented orally in English or Swedish at a public seminar. Prior to the presentation, the student is to review their work together with their supervisor based on the learning outcomes specified in this syllabus and/or in the Higher Education Ordinance for a degree of Bachelor.

Execution of the project, the scientific report, the scientific abstract, the popular science summary and oral presentation are compulsory components.

## Assessment

The assessment is based on the scientific report, the scientific abstract, the short popular science summary and the oral presentation of the degree project.

Having passed the degree project, the student is responsible for uploading the abstract and popular science summary to the University's database. The full report, the scientific abstract and the popular science summary are to be submitted to the department for archiving.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

*Subcourses that are part of this course can be found in an appendix at the end of this document.*

## Grades

Marking scale: Fail, Pass, Pass with distinction.

For a grade of Pass on the whole course, the student must have passed the project report and the oral presentation, and uploaded material to the University's database.

The grade awarded for uploading material to the University's database is Participated.

The examiner/examining committee determine the grade to be awarded for the degree project in consultation with the supervisor. The final grade is determined by a weighted aggregate of the assessment of the execution of the project and the written and oral presentation.

## Entry requirements

To be admitted to the course, students must meet the general entry requirements for higher education and requirements for English proficiency corresponding to English 6 from Swedish upper secondary school, and have passed

- KEMA20 General Chemistry 15 credits, or KEMA10 General Chemistry 7.5 credits and KEMA12 Inorganic Chemistry- Basic Course 7.5 credits, KEMA01 Organic Chemistry- Basic Course 7.5 credits and KEMA03 Biochemistry- Basic Course, 7.5 credits,
- KEMB09 Physical Chemistry- Basic Course 15 credits,
- MOBA02 Chemistry of the Cell 15 credits,
- KEMB06 Analytical Chemistry 15 credits,
- KEMB21 Organic Chemistry 15 credits,
- KEMB22 Inorganic Chemistry 7.5 credits, and
- KEMB29 Spectroscopy and Dynamics 7.5 credits

In addition to courses in chemistry, the student must have passed a course in mathematics equivalent to

- MATA02 Mathematics for Scientists 15 credits

Students who have obtained the equivalent knowledge by other means may also be admitted to the course.

## Further information

The course KEMK10 Chemistry: Bachelor's Degree Project, 15 credits, can be replaced in a degree with KEML10 Chemistry: Bachelor's Degree Project, 30 credits.

## Subcourses in KEMK10, Chemistry: Bachelor's Degree Project

Applies from H19

- 1901 Bachelor's Degree Project, 15,0 hp  
Grading scale: Fail, Pass, Pass with distinction
- 1902 Summary, 0,0 hp  
Grading scale: Fail, Participated