

## Analytical Environmental Chemistry

Analytisk miljökemi

7.5 credits

Single subject course

746G44

Valid from: 2025 Autumn semester

<b>Determined by</b>		<b>Main field of study</b>	
The Quality Board at the Faculty of Arts and Sciences		Environmental Science	
<b>Date determined</b>		<b>Course level</b>	<b>Progressive specialisation</b>
2013-11-29		First cycle	G1F
<b>Revised by</b>		<b>Disciplinary domain</b>	
Chairman of the Course and Programme Syllabus Board at the Faculty of Arts and Sciences		Natural sciences	
<b>Revision date</b>		<b>Subject group</b>	
2024-09-30		Environmental Science	
<b>Offered first time</b>		<b>Offered for the last time</b>	
Autumn semester 2014			
<b>Department</b>		<b>Replaced by</b>	
Institutionen för Tema			

## Entry requirements

- Introduction to Environmental Science and Sustainable Development, basic course, 7.5 credits or equivalent.
- Scientific Theories and Methods in Environmental Science, basic course, 15 credits or equivalent.
- Biogeochemistry and Environmental Analysis, continuation course, 15 credits or equivalent where of 9.5 credits are laboratory teaching activities.
- English corresponding to the level of English in Swedish upper secondary education (Engelska 6).  
Exemption from Swedish

## Intended learning outcomes

On completion of the course, the student should be able to:

- explain and use the most commonly used chemical and microbiological analytical techniques in environmental monitoring
- evaluate and critically review the possibilities and limitations of modern analytical techniques
- plan and carry out representative samplings and analyses of tests
- describe and analyse the principles that constitute the basis for quality assurance and accreditation of laboratories in the field of environmental analysis

## Course content

The contents of the course consist of the theories behind, and practical application of, spectroscopic, chromatographic, wet-chemical, electrochemical and microbiological analytical techniques. Quality assurance procedures for chemical and biological analysis work constitute another part of the course. The importance of the sampling technique for the reliability of the analysis results is also an important part of the contents.

## Teaching and working methods

This course utilises work in tutorial group, lectures, seminars, workshops, laboratory sessions and field studies. Additional resource sessions may be organised in the course. Language of instruction: English. The students should also study independently.

## Examination

The course is examined by:

- active participation in laboratories, field studies and seminars, grading scale: UG
- written group assignments, grading scale: UG
- individually written assignments, grading scale: UV

For an approved final grade, at least G is required on all examination elements. For higher grade at least 50 % is required on the individually written assignments.

Detailed information about the examination can be found in the course's study guide.

If special circumstances prevail, and if it is possible with consideration of the nature of the compulsory component, the examiner may decide to replace the compulsory component with another equivalent component.

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it.

If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaining the objectives of the course.

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination.

Students who have passed an examination may not retake it in order to improve their grades.

## Grades

Three-grade scale, U, G, VG

## Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus.

The course is conducted in such a way that there are equal opportunities with regard to sex, transgender identity or expression, ethnicity, religion or other belief, disability, sexual orientation and age.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.

### About teaching and examination language

The teaching language is presented in the Overview tab for each course. The examination language relates to the teaching language as follows:

- If teaching language is “Swedish”, the course as a whole could be given in Swedish, or partly, or as a whole, in English. Examination language is Swedish, but parts of the examination can be in English.
- If teaching language is “English”, the course as a whole is taught in English. Examination language is English.
- If teaching language is “Swedish/English”, the course as a whole will be taught in English if students without prior knowledge of the Swedish language participate. Examination language is Swedish or English depending on teaching language.