

## Soil Chemistry (I002773)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

<b>Course size</b>	<i>(nominal values; actual values may depend on programme)</i>		
<b>Credits</b> 5.0	<b>Study time</b> 150 h	<b>Contact hrs</b>	50.0 h

### Course offerings and teaching methods in academic year 2022-2023

A (semester 1)	English	Gent	lecture	20.0 h
			practicum	25.0 h
			lecture: plenary exercises	5.0 h

### Lecturers in academic year 2022-2023

Tack, Filip	LA24	lecturer-in-charge
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### Offered in the following programmes in 2022-2023

	crdts	offering
<a href="#">International Master of Science in Soils and Global Change (main subject Physical Land Resources and Global Change)</a>	5	A
<a href="#">International Master of Science in Soils and Global Change (main subject Soil Biogeochemistry and Global Change)</a>	5	A
<a href="#">Exchange Programme in Bioscience Engineering: Agricultural Sciences (master's level)</a>	5	A
<a href="#">Exchange Programme in Bioscience Engineering: Land and Forest management (master's level)</a>	5	A

### Teaching languages

English

### Keywords

soil, chemistry, pedology, dynamics of elements

### Position of the course

This course is a basic course for soil science students aiming to provide students with the chemical aspects of soil that are of importance in understanding its functioning, management and use. Along the trajectory, relevant chemical methods of soil analysis are studied.

### Contents

1. General chemistry concepts
2. Soil composition
3. Acidity and alkalinity
4. Redoxpotential
5. Carbonates
6. Organic matter
7. Sesquioxides
8. Soluble salts
9. Sorption
10. Major nutrients: nitrogen
11. Major nutrients: phosphorous
12. Major nutrients: potassium and secondary macronutrients
13. Trace elements

### Initial competences

Elementary knowledge of inorganic chemistry

**Final competences**

- 1 Explain soil components and chemical reactions in soils
- 2 Explain the principle of analytical methods for soil characterization
- 3 Select suited analytical methods for characterizing soil properties
- 4 Interpret analytical results of soil analysis
- 5 Evaluate the accuracy and the reliability of analytical data

**Conditions for credit contract**

Access to this course unit via a credit contract is determined after successful competences assessment

**Conditions for exam contract**

This course unit cannot be taken via an exam contract

**Teaching methods**

Lecture, practicum, lecture: plenary exercises

**Extra information on the teaching methods**

Practicum: lab exercises: Analysis of soil

Lecture: plenary exercises: during the theory class, example exercises are interactively solved.

**Learning materials and price**

Lecture notes are available during the first lecture.

Slides are electronically available.

**References**

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**Course content-related study coaching**

Illustration of theory via problems and hands-on laboratory exercises.

**Evaluation methods**

end-of-term evaluation

**Examination methods in case of periodic evaluation during the first examination period**

Written examination with open questions

**Examination methods in case of periodic evaluation during the second examination period**

Written examination with open questions

**Examination methods in case of permanent evaluation**

Report

**Possibilities of retake in case of permanent evaluation**

examination during the second examination period is not possible

**Calculation of the examination mark**

A satisfactory participation to all practical exercises is a prerequisite to succeed. An absence can be accepted only provided it is thoroughly justified (e.g. medical note). Students who fail to meet this requirement will obtain a final score of zero for the course.

The score obtained for the practical exercises counts for 5 points of the total score of 20.