Course Specifications
Valid as from the academic year 2015-2016

Soil Chemistry (I001587)

Course

Lecturers in academic year 2019-2020
Tack, Filip
LA24
lecturer-in-charge

Course offerings and teaching methods in academic year 2019-2020
A (semester 1)

<table>
<thead>
<tr>
<th>English</th>
<th>lecture: plenary</th>
<th>7.5 h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>exercises</td>
<td></td>
</tr>
<tr>
<td></td>
<td>practicum</td>
<td>30.0 h</td>
</tr>
<tr>
<td></td>
<td>lecture</td>
<td>22.5 h</td>
</tr>
</tbody>
</table>

Offered in the following programmes in 2019-2020

- Master of Science in Physical Land Resources (main subject Land Resources Engineering)
  - 5 credits
- International Master of Science in Soils and Global Change (main subject Physical Land Resources and Global Change)
  - 5 credits
- International Master of Science in Soils and Global Change (main subject Soil Biogeochemistry and Global Change)
  - 5 credits
- Master of Science in Physical Land Resources (main subject Soil Science)
  - 5 credits
- Exchange Programme in Bioscience Engineering: Land and Forest management (master's level)
  - 5 credits

Teaching languages
- English

Keywords
- soil, chemistry, pedology, dynamics of elements

Position of the course
This course is a basic course aiming to provide students with the chemical aspects of soil that are of importance in understanding its functioning, management and use.

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. Understand the chemical properties of soils
2. Understand chemical principles underlying analytical approaches
3. Evaluate the suitability of analytical approaches for characterizing soil properties

(Approved)
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

Learning materials and price
Lecture notes are available during the first lecture. Slides are electronically available.

References
-

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 perequisits to succeed. An absence can be accepted only provided it is throughly 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.