

Soil Fertility and Soil Ecology in Organic Agriculture (I002483)

Course size *(nominal values; actual values may depend on programme)*
Credits 3.0 **Study time 90 h** **Contact hrs** 30.0h

Course offerings in academic year 2022-2023

A (semester 2) English Gent

Lecturers in academic year 2022-2023

Friedel, Jürgen Kurt WIEN03 lecturer-in-charge

Offered in the following programmes in 2022-2023

	crdts	offering
International Master of Science in Soils and Global Change (main subject Soil Biogeochemistry and Global Change)	3	A

Teaching languages

English

Keywords

Soil management, soil structure, pH value, soil organic matter, soil organisms, soil food web, arbuscular mycorrhiza, biological nitrogen fixation, nutrient availability, nutrient mobilization

Position of the course

Contents

Introduction Soil fertility: Definition and components, significance in organic farming
 Effects of organic farming on the soils: Results of comparative experiments
 Selected components of soil fertility and assessment methods
 Exercise and practice: Practice in field, application of methods, protocol
 Field exercise will probably be substituted by video tutorials due to Covid 19.

Initial competences

no previous knowledge expected

Final competences

Graduates of this course can

- Identify components of soil fertility ("soil functions") that are significant in organic farming
- Understand how they are affected by soil management
- List and apply methods to assess these functions
- Understand dependence of soil processes on soil properties
- Understand interactions between soil minerals, soil organic matter, soil organisms and plants: feedback loops, soil food web, "microbial loop", "active nutrient mobilisation" by plants
- Deduce site-specific particularities and weak points of soil functions
- Develop management methods to further soil functions under site-specific conditions

Conditions for credit contract

This course unit cannot be taken via a credit contract

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture: plenary exercises, Excursion, Lecture

Extra information on the teaching methods

expected from students: - attending seminar and field part, - commitment, - writing a protocol.
 Service from the teachers: - collection of sheets and reference list are available on BOKUlearn
 - supervision during the field training and exercise part.

Learning materials and price

References

Sheets and a Reference list are accessible on BOKUlearn.

Course content-related study coaching

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Oral examination

Examination methods in case of periodic assessment during the second examination period

Oral examination

Examination methods in case of permanent assessment

Participation, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

Exams after the excursion and field training and sending the protocols.

Prerequisite is the participation in the field excursion and exercise with submission of a protocol.

Calculation of the examination mark