

## 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
<a href="#">International Master of Science in Soils and Global Change (main subject Soil Biogeochemistry and Global Change)</a>	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**