GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

Living Lab Summer School in Soils and Global Change (I002994)

Course size *(nominal values; actual values may depend on programme)*

Credits 3.0 **Study time 90 h**

Course offerings in academic year 2027-2028

A (semester 2)	English	Gent

Lecturers in academic year 2027-2028

Bauters, Marijn	LA20	lecturer-in-charge
Diaz-Pines, Eugenio	WIEN03	co-lecturer

Offered in the following programmes in 2027-2028	**crdts**	**offering**
International Master of Science in Soils and Global Change (main subject Soil Ecosystem Services and Global Change)	3	A
International Master of Science in Soils and Global Change (main subject Soil-Plant System Processes and Global Change)	3	A

Teaching languages

English

Keywords

Soil formation, soil processes, soil evolution, formation of diagnostic horizons and materials

Position of the course

This course integrates previously acquired knowledge on soil processes, soil threats and their assessment in the first two semesters of the IMSOGLO-programme. Students will work together in a Living Lab where sustainable land management practices are tested, in a context of agro-ecology and organic farming, rewetting of drained peatland, grass biomass production or forest management (depending on the partner institute where the summer school is organized). They will evaluate these practices in relation to the UN Sustainable Development Goals and the EU's Green Deal objectives thus addressing "wicked" problems with contradicting, conflicting and sometimes even changing requirements. They perform soil testing and soil health assessment, map stakeholder interactions, evaluate the effectiveness of the practices based on collected data and by using simulation models, and communicate their findings to stakeholders and the broader public.

Contents

Theory
Overall introduction to the concept of Living Labs and the specific Living Lab of interest (on agro-ecology and organic farming, rewetting of drained peatland, grass biomass production or forest management), linkage with Sustainable Development Goals and EU's Green Deal targets, EU's Soil Mission, ecosystem services, and planetary boundaries. External experts will be invited.
Exercises
Getting acquainted with models to simulate for example crop yield, leaching of agro-chemicals, greenhouse gas emission and to perform scenario analysis; role-playing game for practising stakeholder collaboration
Field visits
Demonstration, sampling, measuring and monitoring soil and plant properties.
Communication
Group presentations to peers and stakeholders, maintenance of a blog

Initial competences

The summer school builds on certain learning outcomes of course units soil evolution under global change, soil physics, soil chemistry, soil biology, applied statistics, and land information systems; these are part of the first semester programme of IMSOGLO. Participation to these courses is a prerequisite.

Final competences

1 Students have a basic understanding of sustainable land management practices, in a context of agro-ecology and organic farming, rewetting of drained peatland, grass biomass production or forest management (depending on where the summer school is organized)
2 Students understand how healthy soils contribute to UN Sustainable Development Goals and the EU's Green Deal targets, EU's Soil Mission, delivering ecosystem services, and planetary boundaries
3 Students are able to evaluate sustainable management practices in relation to the UN Sustainable Development Goals and the EU's Green Deal objectives thus addressing "wicked" problems with contradicting, conflicting and sometimes even changing requirements
4 Students are able to directly interact with stakeholders and co-create scientific-sound solutions to societal challenges
5 Students are proficient in soil testing, soil health assessment, and the implementation of soil improvement strategies for sustainable land management
6 Students are able to communicate concepts of sustainable land management and research findings to diverse audiences, including peers, stakeholders, and the general public
7 Students have the capacity for self-reflection, continuous learning, and ongoing improvement of sustainable land management practices
8 Students develop leadership qualities to drive positive change in the field of sustainable land management, whether through advocacy, research, or practical applications
9 Students develop commitment to stewarding the land and natural resources (our natural capital) in a sustainable and responsible manner, prioritizing long-term ecological health

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

Group work, Seminar, Excursion, Lecture

Extra information on the teaching methods

After plenary lectures, exercises are introduced; these must be done individually or in small student groups and have to be presented by the students. Feedback is provided during the summer school week.

Study material

Type: Slides

Name: Slides
Indicative price: € 10
Optional: no

References

Course content-related study coaching

Instructors (teaching staff and experts) are available for questions and further guidance during the Summer School.

Assessment moments

continuous assessment

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

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

Examination methods in case of permanent assessment

Professional practice, Presentation, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible in modified form

Extra information on the examination methods

Students present their results during the summer school to peers, lecturers, experts, stakeholders and alumni. These receive feedback and are being evaluated during the summer school.

Calculation of the examination mark

Students who eschew period aligned and/or non-period aligned evaluations for this course unit (or do not participate to the exercises) may be failed by the examinator.