

Integrated Sustainable Agriculture (I002654)

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

Credits 5.0	Study time 150 h	Contact hrs 25.0h
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Course offerings and teaching methods in academic year 2022-2023

A (Year)	Dutch	Gent	self-reliant study activities	0.0h
			lecture	10.0h
			group work	15.0h

Lecturers in academic year 2022-2023

De Smet, Stefaan	LA22	lecturer-in-charge
Buyse, Jeroen	LA27	co-lecturer
De Clercq, Patrick	LA21	co-lecturer

Offered in the following programmes in 2022-2023

Master of Science in Bioscience Engineering: Agricultural Sciences	crdts 5	offering A
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Teaching languages

Dutch

Keywords

Agricultural systems, innovation, sustainability

Position of the course

This course is a final program's course that aims at integrating and using acquired knowledge and skills from the master's subjects of the programme into a case study. The students must develop a case study in groups in which the different components of an agricultural system (1/ biology: soil, plant and/or animal; 2/ technology; 3/ socioeconomy) are treated. The focus is on interactions between the different components of an agricultural system and on evaluating its sustainability. In addition, when working out the assignment, attention is also paid to project management and other skills such as teamwork, discipline, result-oriented work, communication etc.

Contents

The students choose a specific case study that they develop in a group of 3-5 students and that can be at different levels: company, chain, regional or international. In any case, the three components (biology, technology and socio-economy) must be addressed in the elaboration of the assignment. The students can divide tasks among themselves, but there must be clear and documented project management.

Examples of case studies are:

- Conversion of a fruit or vegetable conventional farm to organic farming
- Design of a food forest
- Design of an urban farm
- Applying agroforestry on an arable crops farm
- Production of mealworms on residual biomass as a feed source for pigs

The elaboration of the case study will be presented at the end of the year to the other students of this subject and teachers involved in the programme. This is followed by a discussion in a broad context.

Initial competences

This course is an integration course and builds on the master's courses of the curriculum of Bioscience Engineering: Agriculture.

Final competences

- 1 Analyze and develop an agricultural case study with interactions between soil, plant and/or animal, technology and socio-economy at the level of a novice professional.
- 2 Approach agricultural systems in a multidisciplinary and integrated manner.
- 3 Evaluate sustainability aspects of agricultural systems in a broad societal context.
- 4 Working in a team on an agricultural case study and presenting and defending it orally and in writing.

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

Group work, Lecture, Self-reliant study activities

Extra information on the teaching methods

Lectures are coaching sessions by the teachers involved and other members of the education team.

Each student is expected to take own initiative to fulfill the tasks assigned to him/her within the group, to undertake independently necessary research work for this purpose and to report his/her findings to the group.

Learning materials and price

There is no manual or written course material available. Students must use course materials from the general or elective courses offered within their program, and, if necessary, look up additional information. Specific information can also be provided by the supervisors during the interactive coaching sessions.

References

Course content-related study coaching

The general course of the case study is supervised by the teachers of this subject and other members of the education team. Contact hours are provided for the guidance where the students can request additional information and/or clarification from the teachers. Depending on the subject of the case study and the related expertise, other teachers from the programme will also be involved. Communication is via Ufora.

Assessment moments

end-of-term and continuous assessment

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

Report, Oral examination, Peer assessment

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

Report, Oral examination

Examination methods in case of permanent assessment

Report, Participation

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

Throughout the course (annual course) a report must be submitted per semester: an interim report after the first semester and a final report during the second semester. Reports of the group meetings should also be available throughout the year. After the first semester, an interim report has to be submitted, which is also presented, and upon which feedback and feedforward is provided. In the course of the second semester, the final report will be submitted. The final report is presented to and discussed with the entire group of students of this course as a final period-related evaluation. The final evaluation covers the entire process.

Calculation of the examination mark

Interim report and presentation: 10%

Final report: 40%

Final presentation and discussion: 30%

Peer assessment (soft skills, team work, project management): 20%

The examiner may declare the student who withdraws from period-related and/or non-period-related evaluations for this course to be unsuccessful.

