GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2026-2027

Animal Production Systems (I002517)

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

Credits 5.0 **Study time 150 h**

Course offerings and teaching methods in academic year 2026-2027

A (semester 1)	Dutch	Gent	independent work
			lecture
			group work
			excursion

Lecturers in academic year 2026-2027

De Smet, Stefaan	LA22	lecturer-in-charge
Declercq, Annelies	LA22	co-lecturer
Ingels, Katrijn	LA22	staff member

Offered in the following programmes in 2026-2027	**crdts**	**offering**
Bachelor of Science in Bioscience Engineering	5	A

Teaching languages

Dutch

Keywords

Animal science, production systems, livestock husbandry, cattle, pigs, poultry, milk production, meat production, egg production, animal genetics, animal-environment interactions, animal welfare, environmental impact, aquaculture, fish, larval feed, sustainability

Position of the course

The aim of this course is to gain insight into the most important aspects of terrestrial and aquatic animal production systems. The emphasis is on the zootechnical aspects of the sustainable management of these systems, in interaction with the environment.

Contents

Theory: contents of the study material dealt with in the lectures:

Land-based production systems (3/4):

1. Introduction: domestication and taxonomy of farm animals, animal farming systems in Flanders and globally
2. Cattle husbandry: breeds, genetics, reproductive cycle, milk production, meat production, management
3. Pig husbandry: breeds, genetics, reproductive cycle, meat production, management
4. Poultry production: genetics, reproductive cycle, egg production, meat production, management
5. Farm animal breeding: monogenic traits, evaluation of quantitative traits, breeding value estimation, selection, crossbreeding
6. Effect of the environment on farm animals: animal welfare; environmental factors and housing; human-animal interaction
7. Effect of animal production on the environment: solid, liquid and gaseous emissions; aspects of animal and human health; sustainability
8. Quality of animal products: quality assessment of milk, meat and eggs

Aquatic production systems (1/4):

1. Opportunities and limitations of aquaculture; aquaculture vs. terrestric animal

production; types of aquaculture; overview of reproduction stages
2. Overview of the most important groups and species: use of live food in the larval stage; fish; crustaceae; mollusks
3. Overview of the most important production systems
4. Challenges and current evoluation in the growth of sustainable aquaculture
5. Overview of aquaculture in Flanders

The *practical exercises* consist of group visits to production systems. Besides three general visits with the whole group of students to research farms, the students also have to visit independently in small groups a commercial farm of choice and report about this. In addition, there is an independent assignment on some ethical issues in livestock production.

Initial competences

Basic knowledge of biology

Final competences

1 Identify and compare the characteristics and occurrence of the main livestock and aquaculture systems
2 Explain and compare the reproductive and production cycles of cattle, pigs and chickens
3 Identify the genetic makeup of commercial cattle, pig and poultry farming systems
4 Identify the main groups, species and farming systems in aquaculture
5 Interprete the impact of environmental conditions on performances and welfare of animals
6 Interpret the management and functioning of animal production systems at the farm level, the interactions with the environment and the environmental impact
7 Compare and evaluate qualitatively different animal (terrestric and aquatic) production systems on sustainability aspects in a broad sense and evolutions in this context
8 Working as a team, describe, analyse and explain the components, production cycles, products and management of a specific animal farm to fellow students.

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, Excursion, Lecture, Independent work

Extra information on the teaching methods

The theory is covered in lectures. The practical exercises consist of visits by the entire group of students to research farms and a group task. The group task involves a visit, organised independently by groups of 3–4 students, to a commercial farm of their choice. The information gathered at the farm must be summarised in a report and a presentation. At the end of the course, all students present their farm visit to the whole group of students, and this is discussed in relation to the topics addressed in the lectures. The independent reflection on a number of ethical issues in livestock farming is also discussed in group.

Study material

Type: Handouts

Name: Notes
Indicative price: Free or paid by faculty
Optional: no
Language : Dutch
Available on Ufora : Yes
Additional information: The notes include slides and accompanying text.

Type: Excursion

Name: Farm visits
Indicative price: € 50
Optional: no

Additional information: Travel to the experimental farms is largely paid for by the programme, but students should also provide for their own travel (visit to ILVO, Melle and one farm visit of their choice).

References

In the study material, reference is made to several handbooks, documents, publications and relevant websites.

Course content-related study coaching

During the lectures, information is actively exchanged with the students and the course content in the syllabus is explained. Visits to research farms are supervised. Guidelines are available for the independent visits to a commercial farm and for reporting on these visits. Interim feedback is provided on the report of the farmvisit.
Communication takes place via Ufora. Questions regarding the content and exercises may be asked during and after the lectures, and via email to the lecturer. Additional personal supervision is available by appointment.

Assessment moments

end-of-term and continuous assessment

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

Oral assessment, Written assessment

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

Oral assessment, Written assessment

Examination methods in case of permanent assessment

Participation, 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

Period-aligned evaluation: written and oral assessment: primarily open-ended questions that are prepared in writing and discussed orally with the lecturer.
Non-period aligned evaluation: participation in practical exercises; assessment of the content of the report, the quality of the presentation and the answers to the questions. Attendance at farm visits is compulsory.

Calculation of the examination mark

Period-aligned evaluation: 70% of the final score
Non-period-aligned evaluation: 30% of the final score
Students who score less than 10/20 in at least one of the components cannot pass the course as a whole. If, in such a case, the final score would otherwise be 10 or more out of 20, it will be reduced to the highest fail score (i.e. 9/20).