

## Animal Production Systems (1002517)

**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 2025-2026**

A (semester 1)

Dutch

Gent

independent work

excursion

lecture

group work

**Lecturers in academic year 2025-2026**

Ingels, Katrijn

LA22

staff member

De Smet, Stefaan

LA22

lecturer-in-charge

Declercq, Annelies

LA22

co-lecturer

Degroote, Jeroen

LA22

co-lecturer

Hostens, Miel

LA22

co-lecturer

**Offered in the following programmes in 2025-2026**

[Bachelor of Science in Bioscience Engineering](#)

**crdts**

**offering**

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. terrestrial 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 evolution in the growth of sustainable aquaculture
5. Overview of aquaculture in Flanders

The *practical exercises* consist of group visits to livestock and aquatic farms and research centres. Besides three general visits with the whole group of students, the students also have to visit in a smaller group (3-4 students) a commercial farm. The students have to collect information regarding various aspects of the farm and the management as was dealt with in the theory (e.g. composition of the herd, feeding and management strategies etc). This information has to be summarized in a report and in a presentation. The students present their farm visit to the whole group of students and this is further discussed in relation to the information given during the lectures. In addition, there is a reflection on some ethical issues in livestock production.

### **Initial competences**

Profound knowledge of biology

### **Final competences**

- 1 Have basic knowledge of animal products and the most important elements of the production systems (terrestrial and aquatic).
- 2 Have insight in the functioning of animal production systems and the interactions with the environment.
- 3 Describe and compare different animal production systems.

### **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 dealt with in the lectures. The exercises consist of organised visits to production systems with the complete group of students, and of a visit in a smaller group (3-4 students) to a production system of own choice (commercial farm). The information gathered on the farms has to be summarised in a report and a presentation. At the end of the course, all groups present their visit report to the other students, and this is discussed.

### **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: Free or paid by faculty

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**

In the lectures information is actively exchanged with the students and the study material is discussed. The exercises consist of guided farm visits (see higher). Questions on the contents and the exercises can always be made via Ufora or via e-mail to the lecturer or the assistants. There is intermittent feedback on the report of the farm visit. Personal support is possible after making an 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, Peer and/or self assessment, 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**

The period-aligned evaluation consists of 4 written questions (3 on terrestrial production systems and 1 on aquatic systems), that are subsequently discussed with the examiner.

The non-period-aligned evaluation consists of participation at the farm visits, and the evaluation of the contents of the report, the quality of the presentation and the answers to the questions.

**Calculation of the examination mark**

Period-aligned evaluation: 70%

Non-period-aligned evaluation: 30%. Participation at the farm visits is obligatory. Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.