GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2025-2026

Animal Nutrition (I003083)

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

Credits 5.0 **Study time 150 h**

Course offerings in academic year 2025-2026

A (semester 2)	Dutch	Gent

Lecturers in academic year 2025-2026

Fievez, Veerle	LA22	lecturer-in-charge
Degroote, Jeroen	LA22	co-lecturer

Offered in the following programmes in 2025-2026	**crdts**	**offering**
Master of Science in Bioscience Engineering: Agricultural Sciences	5	A

Teaching languages

Dutch

Keywords

Ruminant nutrition, pig nutrition, feed evaluation, requirements, diet formulation, circularfeed resources

Position of the course

This course focuses on the nutrition of ruminants and pigs,combining traditional feedingsystems with advanced innovations. Students examine feeding standards in relation to key physiological processes such as maintenance, growth, lactation, pregnancy, and labour, which underpin nutrition systems for various livestock classes. The course emphasizes specific nutritional requirements and disorders associated with physiological stages like weaning, early lactation, and reproduction. Feed resources, with a focus on circularand non-human-edible options,as well as nutritional strategies to address and mitigate environmental, animal welfare, and animal health challenges, are examined and critically discussed.

Contents

THEORY

1. Introductionto Animal Nutrition

1.1 General principles of energy and protein evaluation systems
1.2 Circular feed streams and their nutritional characteristics
1.3 Vitamins, minerals, trace elements and feed additives
1.4 Diet formulation: basics& new developments
1.5 Integration of farm data and on-farmobservations to optimizefeeding
1.6 Assessing sustainability in animal nutrition

2. Ruminant Nutrition: Sustainable Strategies for Health, Welfare,and Production

2.1 Application of energyand protein evaluation systems
2.2 Feeding lactating cattle
2.3 Feeding calves
2.4 Feeding beef cattle
2.5 Sustainablediets and circularfeed streams in ruminant nutrition

3. Pig Nutrition: Sustainable Strategies for Health, Welfare,and Production

3.1 Application of energy, protein,and amino acid evaluation systems
3.2 Feeding gestating and lactating sows

3.3 Feeding growingpigs and piglets

PRACTICAL EXERCISES

The exercises use state-of-the-art principles and calculation tools to formulate practical ruminant and pig diets tailored to the animal's physiological status. The sustainability aspects of these diets are evaluated. Students develop realistic innovations to further enhance the sustainability of the diets.
Excursions and interactions with industry professionals support the exercises.

Initial competences

Sustainable Animal Nutrition builds on certain learning outcomes of course unit Animal Physiology; or the learning outcomes have been achieved differently.

Final competences

1 Apply principles of energy, protein,and amino acid evaluation systemsto formulate livestock diets.
2 Critically assess feed evaluation systems and identify potential improvements based on new developments.
3 Formulate and optimize diets for ruminants and pigs based on physiological stages and production levels.
4 Incorporate streams into sustainable feeding strategies.
5 Assess the environmental, health,and welfare impactsof feeding strategies and balance trade-offs effectively
6 Design nutritional strategies to preventor address animal health and welfare risks.
7 Use on-farmdata and sustainability assessments to guide decision-making and optimize diets

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

Excursion, Lecture, Independent work

Extra information on the teaching methods

The content of this course is illustrated with up-to-date slides during lectures. Exercises are prepared independently using an introduction and detailed guidelines. These are discussed afterwards. This forms part of the non-periodic evaluation.

Study material

Type: Syllabus

Name: Course notes animal nutrition including slides and text
Indicative price: Free or paid by faculty
Optional: no
Language : English
Available on Ufora : Yes

References

Specialised journals, scientific articles and books. The exact references will be found in the teaching materials made available on Ufora.

Course content-related study coaching

During the contact hours, the different topics are discussed under supervision of the lecturer. Exercises are prepared by the students based on guidelines provided by the lecturer. Q&A as well as feedback-discussion sessions are scheduled in association with each of the exercises.
Permanent opportunity for questioning, follow-up as well as feedforward and feedback before,during and after lectures and during specific sessions.

Assessment moments

end-of-term and continuous assessment

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

Oral assessment

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

Oral assessment

Examination methods in case of permanent assessment

Oral assessment, Written assessment with multiple-choice questions, 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

Theory: period aligned evaluation
Exercises: non-period aligned evaluation

Possibility for period aligned evaluation of exercises (agreement between lecturer and student).

Calculation of the examination mark

The final grade will be calculated as follows:
- 50% oral examination
- 50% permanent evaluation

If students choose not to participate in the assessment of one or more components, or if they obtain less than 8/20 (not rounded) for at least one of the components, passing the course unit as a whole is no longer possible. If the total score does turn out to be a mark of 10 or more out of twenty, this is reduced to the highest fail mark (9/20).