

## Animal Nutrition (I002653)

**Wegens Covid19 kan mogelijk afgeweken worden van de onderwijs- en evaluatievormen. Dergelijke afwijkingen zullen via Ufora worden gecommuniceerd.**

**Cursusomvang** *(nominale waarden; effectieve waarden kunnen verschillen per opleiding)*

**Studiepunten** 5.0      **Studietijd** 150 u      **Contacturen**      50.0 u

### Aanbodsessies in academiejaar 2021-2022

A (semester 2)      Engels      Gent

### Lesgevers in academiejaar 2021-2022

Fievez, Veerle      LA22      Verantwoordelijk lesgever  
Michiels, Joris      LA22      Medelesgever

### Aangeboden in onderstaande opleidingen in 2021-2022

	stptn	aanbodsessie
<a href="#">Master of Science in de bio-ingenieurswetenschappen: landbouwkunde</a>	5	A
<a href="#">Uitwisselingsprogramma bio-ingenieurswetenschappen: landbouwkunde (niveau master-na-bachelor)</a>	5	A
<a href="#">Uitwisselingsprogramma bio-ingenieurswetenschappen: Food Science and Nutrition (niveau master-na-bachelor)</a>	5	A

### Onderwijstalen

Engels

### Trefwoorden

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

### Situering

This course deals with ruminant, pig and poultry nutrition. In a first part, the course describes feeding standards in relation to the physiological processes (maintenance, labour, growth, lactation, pregnancy) from which feeding systems for the different classes of farm animals are derived. In a second part, emphasis is put on specific requirements and nutritional disorders in relation to the physiological (weaning, growth, early lactation, breeding, egg production) and metabolic status of the animal. Feed resources and their characteristics are discussed. Feed technology is introduced. Sustainability dilemmas related to feed resources and animal nutrition are interactively discussed.

### Inhoud

1. Energy and protein evaluation systems: beef & dairy, pigs, laying hens & broilers
2. Feed resources
  - 2.1. Feed ingredients: chemical & nutritional characteristics, hazardous substances
  - 2.2. Feed additives
  - 2.3. Feed technology
3. Tailoring animal nutrition in relation to the animal's physiological status
  - 3.1. Lactating animals (dairy cattle & sows)
  - 3.2. Weanling piglets
  - 3.3. Laying hens & broilers
4. Nutritional prevention of metabolic, nutritional and immunological disorders
5. Integrated diet formulation
  - 5.1. Diet formulaton (including stock management of roughages, linear programming)
  - 5.2. Formulating sustainable and functional diets
  - 5.3. Integrating biomarker and sensor data in diet formulation

### Begincompetenties

Animal Nutrition bouwt verder op bepaalde eindcompetenties van opleidingsonderdeel Animal Physiology; of de eindcompetenties werden op een andere manier verworven.

## **Eindcompetenties**

- 1 Having profound knowledge in determination of nutrient content and evaluation.
- 2 Animal species specific requirements and their integration in energy and protein evaluation systems are known.
- 3 Formulation of diets based on requirements according to the production stage and level.
- 4 Application of linear programming to formulate diets.
- 5 Critically evaluate current feed evaluation systems and new developments.
- 6 Profound insight in the origin of metabolic disorders and the functions of non-nutritive feed additives.
- 7 Relate nutritional composition to animal responses and vice versa.
- 8 Relate nutrition to emissions towards the environment, animal health and animal welfare.

## **Creditcontractvoorwaarde**

Toelating tot dit opleidingsonderdeel via creditcontract is mogelijk mits gunstige beoordeling van de competenties

## **Examencontractvoorwaarde**

Dit opleidingsonderdeel kan niet via examencontract gevolgd worden

## **Didactische werkvormen**

Begeleide zelfstudie, excursie, hoorcollege, integratieseminarie, practicum, werkcollege: geleide oefeningen, werkcollege: PC-klasoefeningen

## **Toelichtingen bij de didactische werkvormen**

Theory: oral lectures ('hoorcollege')

Feedstuff characteristics: personal collection of data for dairy cattle, gestating & lactating sows, piglets, broilers & laying hens ('begeleide zelfstudie') + discussion sessions & feedback on personally collected data

Exercises: practical exercise in relation to feed evaluation, calculations in relation to energy and protein evaluation system & diet formulation (personal preparation ('zelfstandig werk') - preparation of the exercises + discussion sessions ('geleide oefeningen')), practical on farm evaluation of nutrition and production characteristics, pilot compound feed installation & premix company (excursions), compound feed formulation based on linear programming ('PC-klasoefeningen'), interactive discussion on sustainable diets with stakeholders

## **Leermateriaal**

Course material is available. Geraamde totaalprijs: 20 EUR  
Optional excursion to feed design lab (additional costs - to be determined)

## **Referenties**

cfr. extensive list of references in the course material

## **Vakinhoudelijke studiebegeleiding**

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.

## **Evaluatiemomenten**

periodegebonden en niet-periodegebonden evaluatie

## **Evaluatievormen bij periodegebonden evaluatie in de eerste examenperiode**

Schriftelijk examen met open vragen, mondeling examen

## **Evaluatievormen bij periodegebonden evaluatie in de tweede examenperiode**

Schriftelijk examen met open vragen, mondeling examen

## **Evaluatievormen bij niet-periodegebonden evaluatie**

Mondeling examen, participatie, verslag

## **Tweede examenkans in geval van niet-periodegebonden evaluatie**

Examen in de tweede examenperiode is enkel mogelijk in gewijzigde vorm

## **Toelichtingen bij de evaluatievormen**

Theory: period aligned evaluation

Exercises: non-period aligned evaluation

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

Exercises: assessment of cooperation and interaction during exercises and exercise

preparation reports

**Eindscoreberekening**

8/20 - non-period aligned evaluation

12/20 - period aligned evaluation