UCLouvain

lbira2107

2025

Animal production 1

3.00 credits	37.5 h + 7.5 h	Q2

Teacher(s)	Froidmont Eric ;
Language :	French > English-friendly
Place of the course	Louvain-la-Neuve
Prerequisites	The set of competences, abilities and knowledge acquired during a bachelor degree in the area of Bioscience engineering.
Main themes	the concepts presented during the course: - Basic concepts in animal nutrition; - Formulation of balanced and optimized diets for livestock; - The concept of animal production sectors; - herd management practices; - The impact of zootechnical practices on the quality of foods from animal origin; - The influence of the production techniques on the composition of animal effluents.
Learning outcomes	**At the end of this learning unit, the student is able to :** a. Contribution de l'activité au référentiel AA (AA du programme) 1.1 à1.4 ; 2.1 à2.3 ; 4.1 ; 4.2 ; 4.5 ; 4.7 ; 6 .1 ; 6.2 ; 6.4 ; 6.5. b. At the end of the course, the student will be able to: - Describe the origin, the composition and the nutritional value of the main animal feeds, - Explain livestock rationing strategies based on scientific knowledge, 1 - Analyse and formulate balanced diets based on the feeding systems, - To understand the basic principles of animal physiology, - Explain and justify the techniques of herd management (cattle, pigs, and poultry), - Describe the main sectors related to animal production (cattle, pigs, and poultry), - Predict the influence of zootechnical practices on product quality, - To place the animal productions in a perspective of sustainable development.
Evaluation methods	Written exam comprises knowledge questions and reflection questions, evaluating the approach chosen by the student to answer a complex problem. There is also an evaluation of the oral presentation and the defense relating to the thematic research done by the student in the context of a group work, as well as her/his active participation in the activities. The final grade represents the weighted average of the written exam (80% of the final grade) and of the student's participation in the activities, including group work (20% of the final grade)
Teaching methods	Theoretical lessons and a group work including a farm visit. Visit of a farm or associated structure and conference according to the possibilities.
Content	**1. Theoretical course** The first part deals with the principles of animal nutrition, by explaining the different nutrients (carbohydrates, proteins, lipids, etc.) present in feed and their utilisation (digestion and metabolism) by mono and polygastrics. The cattle feeding systems in force in Belgium, based on net energy (VEM / VEVI or UFL / UFV) and digestible proteins (PDI or DVE / OEB), are then explained in order to be able to better characterize the feedstuffs. The second part deals with the concepts of rationing. It introduces the different types of feed for livestock, separating forages from concentrates. The techniques for preserving fodder (silage, hay) are also explained as well as the origin of the by-products. The different feed treatments and their objectives are specified. The main rules to be observed for a balanced diet of ruminants (dairy cow and suckling cattle of the BBB type), allowing to avoid metabolic diseases (acidosis, ketosis, tetany, milk fever), are explained before carrying out an exercise of rationing in dairy cows. In the third part, the technical management of herds for the main farms encountered in Belgium (dairy cattle, suckling cattle, pork, laying poultry, broiler poultry) and the sectors associated with these productions are presented. Finally, the fourth part deals with the sustainability of livestock farming, by addressing the concept of animal efficiency and the consequences of certain technical choices on the environmental impact (greenhouse gas, ammonia, nitrates), animal welfare, product quality and, more generally, the resilience of livestock farms.

	2. A **group work** on a particular animal production including a farm visit and the production of an oral presentation. **3. An excursion** to a farm and / or an animal production research centre is planned according to the possibilities.
Inline resources	Moodle
Bibliography	Notes de cours données par les professeurs Livres de référence conseillés mais non imposés The slides presented during the course are available Reference books recommended but not required
Other infos	This course can be given in English
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Agricultural Bioengineering	BIRA2M	3		