

Due to the COVID-19 crisis, the information below is subject to change, in particular that concerning the teaching mode (presential, distance or in a comodal or hybrid format).

3 credits

37.5 h + 7.5 h

Q2

Teacher(s)	Froidmont Eric ;
Language :	French
Place of the course	Louvain-la-Neuve
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.
Aims	a. Contribution de l'activité au référentiel AA (AA du programme) 1.1 à 1.4 ; 2.1 à 2.3 ; 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. ----- <i>The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".</i>
Evaluation methods	<p><b>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</b></p> <ul style="list-style-type: none"> <li>• Written examination comprising questions evaluating (1) the knowledge acquired, (2) the approach developed to solve a complex problem and (3) the ability to propose practical and optimized diets.</li> <li>• Evaluation of the active participation in the visit of an experimental farm.</li> <li>• Evaluation of the oral presentation and the oral defence related to a farm visit by group of students</li> </ul>
Teaching methods	<p><b>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</b></p> <ul style="list-style-type: none"> <li>• All the topics will be addressed through a coordinated set of oral courses, visits of production farms and associated structures, participation in scientific meetings, individual bibliographic searches and training sessions for the use of herd management software.</li> <li>• Most of the activity requires the presence of the students.</li> </ul>
Content	<p><b>1. Theoretical course</b></p> <p>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 / VEV1 or UFL / UVF) and digestible proteins (PDI or DVE / OEB), are then explained in order to be able to better characterize the feedstuffs.</p> <p>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.</p>

	<p>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.</p> <p>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.</p> <p><b>2. An excursion</b> to a farm and / or an animal production research centre is planned.</p> <p><b>3. A group work</b> on a particular animal production including a farm visit and the production of an oral presentation.</p>
<p>Inline resources</p>	<p>Moodle</p>
<p>Bibliography</p>	<p>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</p>
<p>Other infos</p>	<p>This course can be given in English</p>
<p>Faculty or entity in charge</p>	<p>AGRO</p>

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Agricultural Bioengineering	BIRA2M	3		