

6.00 credits

60.0 h + 4.0 h

Q2

Teacher(s)	Debiez Cathy ;Larondelle Yvan ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	Advised knowledge of basic and advanced notions of biochemistry, anatomy of internal organs, molecular biology, physiology and histology to understand the nutrition physiology course.
Main themes	The 'digestive physiology' section covers the following topics: - Functional anatomy and morphology of mammals (domestic and wild monogastric and polygastric mammals) and birds - Digestive functions - Roles of glands - Glandular and microbial digestion - Absorption ' Digestive tract motility (including forestomachs) - Feeding Behavior. The 'nutrition' section covers the following topics: - Concepts of feed, nutrient and needs - Major feed groups ' Different groups of nutrients, metabolic utilization, physiological importance and quantification ' Comparative feed requirements among domestic animals - Energy and nitrogen requirements in animal production and the units used to express them - Some metabolic disorders associated with nutrition in domestic animals - The principles of rationing.
Learning outcomes	<b>At the end of this learning unit, the student is able to :</b>  1 After this course, students will have acquired skills in digestive physiology and nutrition of domestic animals, in order to address future courses related to diseases of the digestive system and their metabolic consequences, as well as feeding strategies for animal performance, health and quality of livestock.
Evaluation methods	Written exam
Teaching methods	Digestive physiology : flipped classroom approach : power point slides and commented videos (available in advance on Moodle). Sessions of exercices will be organized throughout the quarter. Nutrition : Courses with slides (PowerPoint documents are available in advance on Moodle). Exercices concerning rationing (demonstrations).
Content	Digestion section (30 hours) - The course is divided into different sections: oral cavity, esophagus, stomach, forestomachs, pancreas, liver, small intestine, large intestine. - Functional anatomy and morphology of mammals (domestic and wild monogastric and polygastric mammals) and birds - - Digestive functions and digestive glands: overview of secretion, motility, absorption,... - Microbial digestion and motility in the forestomachs and large intestine. - Perinatal digestive physiology. - Feeding behavior and regulation of ingestion. 'Nutrition section' (30 hours + 4 hrs of exercices). The lecture is divided into eight chapters: 1. Feed presentation: constituents (nutrients and non nutrients) and their quantification (presentation of the chemical methods used) - main sources of energy, fat, nitrogen, fibers,... 2. Digestibility and experimental approaches for its determination 3. Metabolic utilization of glucidic nutrients 4. Metabolic utilization of lipidic nutrients 5. Metabolic utilization of dietary nitrogen 6. Concepts of bioenergetics In Chapters 5 and 6: introduction to the concepts of feed requirements of farm animals and the units used for their expression 7. Vitamins, minerals and water 8. Some nutritional metabolic disorders in ruminants. Exercices concern the principles of rationing through the example of dairy cow
Inline resources	Moodle

<p>Bibliography</p>	<p>Dias power point et vidéos disponibles sur Moodle.                  Livres utilisés pour la préparation du cours (ne doivent pas être achetés par les étudiants)                  « Introduction à la nutrition des animaux domestiques »                  Claude Jean-Blain                  Editions Tec&amp;Doc, 2002 (ISBN : 2-7430-0530-0)                  « Animal nutrition »                  P. McDonald, R.A. Edwards, J.F.D. Greenhalgh, C.A. Morgan                  Sixth edition, 2002                  Longman Scientific &amp; Technical, (ISBN : 978-0-582-41906-3)                  « Textbook of veterinary physiology » Cunningham JG, 5th edition (ISBN 0-7216-8994-9)                  « Fundamentals of anatomy &amp; physiology », F Martini, 7th edition Pearson Benjamin Cummings, (ISBN 0-321-31198-1)                  « Principes d'anatomie et de physiologie », Tortora &amp; Derrickson, 2007, 4th edition (ISBN 978-2-8041-5379-3)                  « Digestive disease in the dog and cat » Simpson &amp; Else, Blackwell Scientific Publication, 1991, (ISBN 0-632-02931-5)                  « Comparative physiology of the vertebrate digestive system » Stevens &amp; Hume, 2nd edition, 1995, (ISBN 0-521-444187)                  « Nutrition clinique des animaux de compagnie », Hand, Thatcher, Remillard, Roudebush, 4th edition, Mark Morris Institute, (ISBN 0-945837-05-4)                  + articles scientifiques</p>
<p>Faculty or entity in charge</p>	<p>VETE</p>

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Veterinary Medicine	VETE1BA	6		