

6 credits	60.0 h + 4.0 h	Q2
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Teacher(s)	Debier Cathy ;Larondelle Yvan ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	Courses of biology, biochemistry and physiology <i>The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.</i>
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.
Aims	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.  ----- <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	Oral or written exams
Teaching methods	Courses with slides (PowerPoint documents are available in advance via I-campus).  Exercises concerning rationing (démonstrations).
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 exercises). 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
Bibliography	<p>Livres de référence :</p> <p>« Introduction à la nutrition des animaux domestiques »          Claude Jean-Blain          Editions Tec&amp;Doc, 2002 (ISBN : 2-7430-0530-0)</p> <p>« 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)</p> <p>« Textbook of veterinary physiology » Cunningham JG, 2002, 3rd edition (ISBN 0-7216-8994-9)</p> <p>« Fundamentals of anatomy &amp; physiology », F Martini, 7th edition Pearson Benjamin Cummings, (ISBN 0-321-31198-1)</p> <p>« Principes d'anatomie et de physiologie », Tortora &amp; Derrickson, 2007, 4th edition (ISBN 978-2-8041-5379-3)</p> <p>« Digestive disease in the dog and cat » Simpson &amp; Else, Blackwell Scientific Publication, 1991, (ISBN 0-632-02931-5)</p> <p>« Comparative physiology of the vertebrate digestive system » Stevens &amp; Hume, 2<sup>nd</sup> edition, 1995, (ISBN 0-521-444187)</p> <p>« Nutrition clinique des animaux de compagnie », Hand, Thatcher, Remillard, Roudebush, 4th edition, Mark Morris Institute, (ISBN 0-945837-05-4)</p> <p>+ articles scientifiques</p>
Faculty or entity in charge	VETE

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Veterinary Medicine	VETE1BA	6	LCHM1271V AND LCHM1371B AND LVET1241A AND LBIO1232A AND LVET1295 AND LVET1296	