

**Course name:****BASIC OF ANIMAL NUTRITION**

ECTS	7,5
Course status	obligatory
Course final assessment/evaluation of outcomes	exam
Prerequisites	knowledge and skills in animal nutrition

**Main field of study:****ANIMAL SCIENCE**

Profile of study	General-academic
The code of studies (education level)	SI
Semester of studies	summer
Language of instruction	English

**Course offered by:**

Name of faculty offering the course	Faculty of Animal Science
Name of the competent unit for the coordinator	Department of Nutrition, Biotechnology of Animals and Fisheries
Course coordinator	Prof. dr hab. Z. M. Kowalski (rzkowals@cyfronet.krakow.pl)

**Learning outcomes of the course:**

The code of the description component (symbol of the effect)	Description	Relation to (code)	
		field effect	discipline#

**KNOWLEDGE – the student knows and/or understands:**

Code	Description	Field effect	Discipline#
BAN_W1	basic issues in the field of animal nutrition, especially regulation of feed intake, digestion and absorption of nutrients, as well as feeding of different groups of	ZOO1_W09	RZ
BAN_W2	biological processes occurring during preservation of feeds	ZOO1_W09	RZ
BAN_W3	rules for assessing the nutritive value of feeds	ZOO1_W09	RZ
BAN_W4	the principles of feeding of farm animals (dairy cows, sheep and goats, horses, pigs, laying hens and broiler chickens).	ZOO1_W09	RZ

**SKILLS – the student can:**

Code	Description	Field effect	Discipline#
BAN_U1	take the representative sample of feed and analyze its chemical composition	ZOO1_U08	RZ
BAN_U2	plan the nutritional experiment, including the measurement of digestibility and N balance	ZOO1_U08	RZ
BAN_U3	assess the nutritive value of feeds	ZOO1_U08	RZ
BAN_U4	formulate the diet for dairy cow and horse	ZOO1_U08	RZ

**SOCIAL COMPETENCE- the student is ready to:**

Code	Description	Field effect	Discipline#
BAN_K1	present an active attitude in the area of dissemination and implementation of practical knowledge and professional skills	ZOO1_K01	RZ
BAN_K2	formulate, name, describe, and explain the principles of ethical responsibility for the production of high-quality food from farm animals	ZOO1_K06	RZ

BAN_K3	take care of own safety and the safety of persons participating in a given undertaking, as well as care for one's own health and physical fitness	ZOO1_K10	RZ
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**Teaching content:**

<b>Lectures</b>	<b>30</b>	<b>hours</b>
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Topics of lectures	<ul style="list-style-type: none"> <li>Role of nutrients (protein, energy, minerals and vitamins)</li> <li>Digestibility of nutrients and tissue metabolism</li> <li>Methods used in animal nutrition studies</li> <li>Assessment of nutritive value of feedstuffs</li> <li>Classification of feedstuffs</li> <li>Methods of feedstuffs conservation and processing</li> <li>Feeding of dairy cows and calves</li> <li>Feeding of horses and sheep</li> <li>Feeding of swine and poultry</li> <li>Animal feeding and environmental protection</li> </ul>
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Accomplished learning outcomes	BAN_W1, BAN_W2, BAN_W3, BAN_W4, BAN_K1, BAN_K2
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Verification methods, rules and criteria of outcome assessment	Test covering messages provided to students during lectures. Positive mark - getting at least 55% positive answers
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<b>Classes</b>	<b>45</b>	<b>hours</b>
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Topics of the classes	<ul style="list-style-type: none"> <li>Proximate analysis</li> <li>Dry matter conversion</li> <li>Digestibility measurement</li> <li>Protein value of the feed</li> <li>Energy value of the feed</li> <li>Classifications of feeds</li> <li>Quality of silages and hays</li> <li>Diet formulation</li> <li>Practical nutrition of dairy cattle (field trip)</li> </ul>
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Accomplished learning outcomes	BAN_U1, BAN_U2, BAN_U3, BAN_U4, BAN_K1, BAN_K2, BAN_K3
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Verification methods, rules and criteria of outcome assessment	Test covering messages given to students during classes. Positive mark - getting at least 55% positive answers
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<b>Seminars</b>	<b>0</b>	<b>hours</b>
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Topics of the	
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seminars	
Accomplished learning outcomes	
Verification methods, rules and criteria of outcome assessment	

#### Literature:

Basic	<ol style="list-style-type: none"> <li>1. <i>Animal Nutrition 7th edition</i>, McDonald et al. Ed Prentice Hall, Pearson, USA. 2010.</li> <li>2. Van Soest P.J. 1994. <i>Nutritional Ecology of the Ruminant</i>. Comstock Publishing Associates.</li> <li>3. NRC. <i>Nutrient Requirement of Dairy Cattle, Swine, Poultry</i>. National Academy Press, Washington, D.C.</li> </ol>
Supplementary	<ol style="list-style-type: none"> <li>1. Belay T.K., Svendsen M., Kowalski Z.M., Ådnøy T., 2017. Genetic parameters of blood <math>\beta</math>-hydroxybutyrate predicted from milk infrared spectra and clinical ketosis, and their associations with milk production traits in Norwegian Red cows. <i>J. Dairy Sci.</i>, 100, 6298–6311</li> <li>2. Hadam D., Kański J., Burakowska K., Penner G.B., Kowalski Z.M., Górka P., 2016. Effect of canola meal use as a protein source in a starter mixture on feeding behavior and performance of calves during the weaning transition. <i>J. Dairy Sci.</i>, 99, 1247–1252</li> <li>3. Kowalski Z.M., Górka P., Flaga J., Barteczko A., Burakowska K., Oprządek J., Zabielski R., 2015. Effect of microencapsulated sodium butyrate in close up diet on performance of dairy cows in early lactation period. <i>J. Dairy Sci.</i>, 98, 3284-3291.</li> </ol>

#### Structure of learning outcomes:

Dyscipline – animal husbandry and fishery (RZ)	7,5	ECTS**
Dyscipline –	-	ECTS**

#### Structure of student's activities:

classes carried out with direct participation of the teacher	85	hours	3,4	ECTS**
including:				
lectures	30	hours		
classes and seminars	45	hours		
consultations	8	hours		
participation in research	-	hours		
mandatory practices and internships	-	hours		
participation in the exam and credits	2	hours		
classes carried out with the use of e-learning	-	hours	-	ECTS**
student's own work	80	hours	4,1	ECTS**

Syllabus valid from the academic year 2021/2022

\* where 10 hours of classes = 1 ECTS (in case of 15 h → 2 ECTS)

\*\* stated with an accuracy to 0.1 ECTS, where 1 ECTS = 25 - 30 hours of classes