UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN
Faculty of Animal Bioengineering

02N2O-BwPPzEE

Course sylabus – part A
Biotechnologia w przemyśle paszowym z elementami ekologii

ECTS: 2.00
CYCLE: 2023L

SUBJECT MATTER CONTENT

LECTURE
Directions and current trends and prospects for the development of biotechnology. Biotechnology in feed production and animal nutrition. Transgenic plants in the production of animal feed. Use of biotechnological products in rumen ecosystem modification processes. Biotechnological feed additives in animal nutrition. Additives in silage production.

AUDITORIUM CLASSES
Yeast-based formulations-inactive feed yeast, yeast metabolites, metabolically active yeast cells. Use of specific structures of the yeast cell for the production of specific biopreparations. Estimating the effect of deficiencies of nitrogenous compound fractions and amino acids in practical feeding of cows on their productivity and nitrogen losses. Supplementation of deficient protein-energy nutrition through protected protein and amino acids and protected fat preparations.

LABORATORY CLASSES
The importance of the cannulation technique for assessing nutrient metabolism.

TEACHING OBJECTIVE
To learn about the potential use of biotechnology-derived products in animal nutrition and the feed industry in terms of their impact on the modification of the gastrointestinal ecosystem, digestive processes, health status, product quality and environmental conditions.

DESCRIPTION OF THE LEARNING OUTCOMES OF THE COURSE IN RELATION TO THE DESCRIPTION OF THE CHARACTERISTICS OF THE SECOND LEVEL LEARNING OUTCOMES FOR QUALIFICATIONS AT LEVELS 6-8 OF THE POLISH QUALIFICATION FRAMEWORK IN RELATION TO THE SCIENTIFIC DISCIPLINES AND THE EFFECTS FOR FIELDS OF STUDY:

Symbols for outcomes related to the discipline:	R/ZRA_P7S_KR++, R/ZRA_P7S_WK+, R/ZRA_P7S_WG+, R/ZRA_P7S_KK++, R/ZRA_P7S_UW+++
Symbols for outcomes related to the field of study:	KA7_KK5++, KA7_KR2+, KA7_UW12+, KA7_KR1+, KA7_WG15+, KA7_WK1+, KA7_UW13+, KA7_UW14+

LEARNING OUTCOMES:
Knowledge:
W1 –
W2 –
Skills:

Legal acts specifying learning outcomes: 194/2022
Disciplines: animal science and fisheries
Status of the course: Fakultatywny
Group of courses:C - przedmioty specjalnościowe/związane z zakresem kształcenia
Code: ISCED 0811
Field of study: Animal Science
Scope of education: Fodder Mix Production and Nutrition Consulting
Profile of education: General academic
Form of studies: part-time
Level of studies: second degree studies
Year/semester: 1/1, 1/2

Types of classes: Lecture, Auditorium classes, Laboratory classes
Number of hours in semester: Lecture: 6.00, Auditorium classes: 6.00, Laboratory classes: 6.00
Language of instruction: Polish
Introductory subject: Nutritional value of raw materials and industrial feeds and their processing and utilization
Prerequisites: Knowledge of the subject of animal nutrition and feed science

Name of the organisational unit conducting the course: Katedra Żywienia Zwierząt, Paszoznawstwa i Hodowli Bydła
Person responsible for the realization of the course:prof. dr hab. inż. Cezary Purwin
e-mail: cezary.purwin@uwm.edu.pl

Additional remarks:

U1 –
U2 –

Social competence:

K1 –
K2 –

TEACHING FORMS AND METHODS:

Lecture(W1;W2;K1;K2;):
Auditorium classes(W1;W2;U1;U2;K1;K2;):
Laboratory classes(U2;K1;):

FORM AND CONDITIONS OF VERIFYING LEARNING OUTCOMES:

Lecture (Part in the discussion) - -
Auditorium classes (Colloquium test) - -
Auditorium classes (Presentation) - -
Laboratory classes (Part in the discussion) - -

BASIC LITERATURE:

1. Zwierzchowski, L., *Biotechnologia zwierząt*, Wyd. Warszawa, R. 1997, s. 267-288
2. Jamroz, D., *Żywienie zwierząt i paszoznawstwo*, Tom I, II, III, Wyd. PWN, R. 2015
3. Mikołajczak, J., *Żywienie bydła*, Wyd. ART Bydgoszcz, R. 2005, s. 244-260
4. Libudzisz, Z., *Mikrobiologia techniczna*, Wyd. Politechnika Łódzka, R. 2000, s. 9-105
5. Grela, E.R., *Dodatki w żywieniu bydła*, Wyd. VIT-TRA, R. 2001
6. Kotarbińska, M., Grela E.R., *Dodatki paszowe dla świń*, Wyd. PAN, R. 1995

SUPPLEMENTARY LITERATURE:

Detailed description of ECTS credits awarded - part B

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The number of ECTS credits awarded consists of:

1. Contact hours with the academic teacher:

- participation in: Lecture	6.0 h
- participation in: Auditorium classes	6.0 h
- participation in: Laboratory classes	6.0 h
- consultation	2.0
	Total: 20.0 h.

2. Independent work of a student:

	20.00 h
	14.00 h
	Total: 34.0 h
contact hours + independent work of a student	Total: 54.0 h

1 ECTS credit = 25-30 h of an average student’s work, number of ECTS credit = 54.0 h : 27.0 h/ECTS = 2.00 ECTS on average: 2.0 ECTS

- including the number of ECTS credits for contact hours with the direct participation of an academic teacher: 0,00 ECTS points,

- including the number of ECTS credits for hours of independent work of a student: