

## DISCIPLINE DESCRIPTION

### 1. Program data

1.1 Higher education institution	UNIVERSITY OF ORADEA
1.2 Faculty	Environment protection
1.3 Department	Animal science and Agroturism
1.4 Field of study	Animal Science
1.5 Study cycle	BACHELOR
1.6 Study Program / Qualification	Animal science/ engineer

### 2. Discipline data

2.1 Name of the discipline	NUTRITION AND ANIMAL FEEDING I						
2.2 Course holder	Prof. dr. Mierlita Daniel						
2.3 Seminar / laboratory / project owner	Prof. dr. Mierlita Daniel						
2.4 Year of study	III	2.5 Semester	V	2.6 Type of evaluation	E	2.7 The discipline regime	I

(I) Impusă; (O) Opțională; (F) Facultativă

### 3. Estimated total time (hours per semester of didactic activities)

3.1 Number of hours per week	4	of which: 3.2 course	2	3.3 seminar/laboratory/project	2
3.4 Total hours of the curriculum	56	of which: 3.5 course	28	3.6 seminar / laboratory / project	28
Distribution of Time Fund					ore
Study after manual, course support, bibliography and notes					20
Additional documentation in the library, on the specialized electronic platforms and on the field					8
Training seminars / laboratories, themes, papers, portfolios and essays					16
Tutorial					4
Examinations					8
Other activities.....					
<b>3.7 Total hours of individual study</b>	<b>60</b>				
<b>3.9 Total hours per semester</b>	<b>130</b>				
<b>3.10 Number of credits</b>	<b>6</b>				

### 4. Preconditions (where applicable)

4.1 curriculum	
4.2 skills	

### 5. Conditions (where applicable)

5.1. of course	The lecture room with laptop and videoprojector.
5.2. seminar / laboratory / project	Laboratory room equipped with the equipment necessary to determine the nutrient content and appreciation of the feed quality; computers, Internet connection, specialized software.

### 6. Specific skills accumulated

Professional skills	<p>C1: Elaboration, implementation and coordination of technological processes specific to animal and aquatic animal breeding.</p> <p>C2: Elaboration of technical projects for the establishment / modernization of livestock breeding, fish farming and aquaculture and for accessing financial resources.</p> <p>C3: Selection, amelioration, production and exploitation of biological reproductive material.</p> <p>C5: Implementation of Community Agricultural Policy at national level in the field of animal production.</p> <p>C6: Provide consultancy and extension services in the field of animal husbandry.</p>
Transversal skills	<p>CT2 Applying effective communication techniques in team-specific activities; taking a role in it and respecting the principles of division of labor.</p> <p>CT3 Objective self-evaluation of the need for continuous professional training in order to adapt and respond to the economic requirements; the use of information and communication techniques and at least one international language.</p>

## 7. Objectives of the discipline

7.1 The general objective of the discipline	<p>To communicate to students the concepts, notions and experimental data on:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Nutrients and their nutritional importance,</li> <li><input type="checkbox"/> digestive use and nutritional value of fodder, in the context of proper nutrition;</li> <li><input type="checkbox"/> establishing the nutritional requirements of animals.</li> </ul>
7.2 Specific objectives	<ul style="list-style-type: none"> <li><input type="checkbox"/> Knowledge of the anatomical-physiological and biochemical bases of nutrition;</li> <li><input type="checkbox"/> Determining the nutritional value of the feed relative to the species;</li> <li><input type="checkbox"/> Optimization of feed ratios for the combined feed structure in relation to the species, age, form and level of production.</li> </ul>

## 8. Contents \*

8.1 Cours	teaching methods	Nr. Hours / Observations
The place and role of animal nutrition and nutrition	Lecture, explanation, conversation and dialogue with students heuristics	<b>1</b>
<b>Assessment of feed value.</b>	Lecture, explanation, conversation and dialogue with students heuristics	<b>7</b>
Criterion for assessing the nutritional value of feed.	Lecture, explanation, conversation and dialogue with students heuristics	1
Nutrient content of feed and its biological value. Chemical analysis of fodder.	Lecture, explanation, conversation and dialogue with students	1

	heuristics	
Anatomical and functional features of the digestive tract in domestic animals.	Lecture, explanation, conversation and dialogue with students heuristics	1
Fodder digestibility and nutritional value based on digestible content. - working methods for determining the digestibility coefficient; - apparent and real digestibility; - the factors that influence the degree of digestibility of fodder and feed ratios; - the characterization of different groups of feedingstuffs in terms of digestibility; - the nutritional value of feed on the basis of its content in digestible nutrients.	Lecture, explanation, conversation and dialogue with students heuristics	1
The productive effect and the determination of the nutritional value of the fodder based on it. - direct and indirect methods used to assess the productive effect of feed; - the appreciation of the nutritional value of the feed on the basis of the productive effect.	Lecture, explanation, conversation and dialogue with students heuristics	1
Assessing nutrient value of feed based on content in energy. - the scheme of energy transformations in the body; - assessing the nutritional value of feed on the basis of its energy content (gross, digestible, metabolisable and net).	Lecture, explanation, conversation and dialogue with students heuristics	2
<b>Foods of plant origin - nutritional characteristics and way of use in animal feed.</b>	Lecture, explanation, conversation and dialogue with students heuristics	7
Green foods: pasture, fodder, additional sources of green fodder.	Lecture, explanation, conversation and dialogue with students heuristics	1
Hay: Origin and use in animal feed.	Lecture, explanation, conversation and dialogue with students heuristics	1
Coarse fiber: straw, chaff, corn cobs.	Lecture, explanation, conversation and dialogue with students heuristics	1
Silage feeds: microbiological and fermentative processes, factors influencing fodder; silage with the addition of preservatives, silage technique, appreciation and use of pickled fodder.	Lecture, explanation, conversation and dialogue with students heuristics	1
Juicy winter foods: roots, tubers, chickpeas.	Lecture, explanation, conversation and dialogue with students heuristics	1
Grain cereals, legumes and oilseeds.	Lecture, explanation, conversation and	1

	dialogue with students heuristics	
Feed residues: Grain and pulp waste, residues from the milling industry, oil plants, sugar, starch, spirits and beer industries, etc.	Lecture, explanation, conversation and dialogue with students heuristics	1
<b>Feeds of animal and microorganic origin.</b>	Lecture, explanation, conversation and dialogue with students heuristics	<b>2</b>
Animal feed: animal flour, milk and dairy by-products.	Lecture, explanation, conversation and dialogue with students heuristics	1
Feed yeasts.	Lecture, explanation, conversation and dialogue with students heuristics	1
<b>Urea and synthetic amino acids (lysine, methionine, tryptophan, threonine).</b>	Lecture, explanation, conversation and dialogue with students heuristics	<b>1</b>
<b>Mineral Nutrition.</b>	Lecture, explanation, conversation and dialogue with students heuristics	<b>1</b>
<b>Additional feed additives.</b>	Lecture, explanation, conversation and dialogue with students heuristics	<b>1</b>
<b>Combined foods.</b>	Lecture, explanation, conversation and dialogue with students heuristics	<b>2</b>
Types of fodder combined.	Lecture, explanation, conversation and dialogue with students heuristics	1
The technological flow of compound feed preparation.	Lecture, explanation, conversation and dialogue with students heuristics	1
References		
DRINCENU D. (1994) - Alimentația animalelor domestice. Ed. Euroart, Timișoara.		
HALGA P. și col. (2000) – Nutriție animală. Ed. Dosoței, IAȘI.		
HALGA P. și col. (2002) –Alimentație animală. Ed. Pim, IAȘI.		
MCDONALD; R.A. EDWARDS; JFD GREENHALGH; C.A. MORGAN (2002) – Animal nutrition. Pearson, Prentice Hall.		
MARCU N.; D. MIERLIȚĂ (2006) – Zootehnie generală și alimentație. Ed. Digital Data; Cluj-Napoca.		
MIERLITA D. (2008) – Nutritia si alimentatia animalelor-Curs universitar. Ed. Universitatii din Oradea.		
MIERLITA D. (2008) – Nutritia animalelor domestice. Ed. AcademicPres, Cluj-Napoca.		
POP I.M. (2002) – Aditivi furajeri. Ed. Pim, IAȘI.		

<p>POND W. G.; D.C. CHURCH; K. R. POND (1995) – Basic animal nutrition and feeding. Fourth Edition – Wiley; New York.</p> <p>POPA O.; GH. SĂLĂJAN; A. ȘARA (1991) – Nutrețurile și nutriția rațională a animalelor de fermă. Ed. Ceres, București.</p> <p>SĂLĂJAN GH. (1984) – Prepararea nutrețurilor și controlul calității lor. Ed. Ceres, București.</p> <p>STOICA I. (2001) – Nutriția și alimentația animalelor. Ed. Coral Sanivet, București.</p> <p>ȘARA A.; D. MIERLIȚĂ (2003) – Nutriția și alimentația animalelor de fermă. Ed. AcademicPres, Cluj-Napoca.</p>		
8.2 Seminar	teaching methods	Nr. Hours / Observations
8.3 Laboratory		
Presentation, classification and quantitative evaluation of feed.	lecture, explanation, dialogue with students, individual and team activities.	<b>2</b>
Gross chemical analysis of fodder. - Determination of water, dry matter, crude protein, crude fat, crude pulp and unsalted extracts (SEN) (Weendean scheme).	lecture, explanation, dialogue with students, individual and team activities.	<b>6</b>
Calculating the nutritional value expressed in different units of measurement. - calculation of digestibility coefficients; - calculation of TSD in digestibility experiments with one and two control periods; - calculation of the net starch equivalent; - calculation of oat nutrition unit (UN); milk nutrition units (UNL); meat nutrition unit (UNC), digestible protein (Pd), digestible protein in the intestine (PDI). - calculation of total digestible, metabolisable and net energy.	lecture, explanation, dialogue with students, individual and team activities.	<b>8</b>
The technique of feeding the food rations and the basic conditions that they must meet.	lecture, explanation, dialogue with students, individual and team activities.	<b>2</b>
Optimizing feed rations for cattle (winter and summer).	lecture, explanation, dialogue with students, individual and team activities.	<b>4</b>
8.4 Project		
<p>References:</p> <p>DRINCENU D. (1994) - Alimentația animalelor domestice. Ed. Euroart, Timișoara.</p> <p>HALGA P. și col. (2000) – Nutriție animală. Ed. Dosoftei, IAȘI.</p> <p>HALGA P. și col. (2002) –Alimentație animală. Ed. Pim, IAȘI.</p> <p>MIERLITA D. (2008) – Nutritia si alimentatia animalelor-Curs universitar. Ed. Universitatii din Oradea.</p> <p>POPA O.; GH. SĂLĂJAN; A. ȘARA (1991) – Nutrețurile și nutriția rațională a animalelor de fermă. Ed. Ceres, București.</p> <p>SĂLĂJAN GH. (1984) – Prepararea nutrețurilor și controlul calității lor. Ed. Ceres, București.</p>		

STOICA I. (2001) – Nutriția și alimentația animalelor. Ed. Coral Sanivet, București.  
 ȘARA A.; D. MIERLIȚĂ (2003) – Nutriția și alimentația animalelor de fermă. Ed. AcademicPres, Cluj-Napoca.

**9. Corroborating the contents of the discipline with the expectations of epistemic community representatives, professional associations and representative employers in the field of the program**

The thematic content of the Nutrition and Nutrition discipline is in line with that of other university centers in the country and abroad. It is developed in collaboration with the representative employers in the field of animal husbandry (zootechnical farms, combined feed factories), where the students practice, thus facilitating the graduation of the students.

**10. evaluation**

Tip activitate	10.1 Evaluation criterias	10.2 Metode de evaluare	10.3 Weight of the final grade
10.4 Cours	correctness and completeness of knowledge; - logical coherence; - degree of assimilation of specialized terms - interest in individual study.	continuous evaluation (student's free exposure, oral conversation and questioning, active student participation in courses)  summative assessment (final written assessment during the exam session)	20%  40%
10.5 Seminar			
10.6 Laboratory	- the ability to work with assimilated knowledge; - the capacity to operate with the data and the results obtained in the laboratory; - interest in individual study.	continuous assessment (current written papers, individual papers, active participation of the student in laboratory activities)  Summative assessment (final written assessment during the exam session).	25%  15%
10.7 Project			
10.8 Minimum performance standard: Very good knowledge of one subject out of two; the score given for the periodical checks during the semester should be at least 5; marking "very good" at least ½ of the papers (homeworks) handed over during the year; attending at least 80% of the teaching activities.			

Date of completion

01. 10. 2022

Signature of course holder

Prof. dr. ing. Mierlita D.  
(dadi.mierlita@yahoo.com)

Signature of holder

seminar/laboratory/project  
Prof. dr. ing. Mierlita D.

Date of approval in the department

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Signature of Department Director  
Lecturer dr. ing. Monica Dodu

Sign Decan  
Conf. Dr. Ing. Cristina Maerescu