

SYLLABUS

Academic year 2024 - 2025

1. Program data

1.1. Higher education institution	"Lucian Blaga" University of Sibiu
1.2. Faculty	Faculty of Sciences
1.3. Department	Environmental Sciences, Physics, Physical Education and Sport
1.4. Field of study	Biology
1.5. Cycle of studies ¹	Bachelor's degree
1.6. Specialization	Biology

2. Discipline data

2.1. Name of the discipline	Functions of nutrition relation and reproduction in animals	Cod	FSTI. MFE. BIOEN.L.SA.5.1110.C-5.5
2.2. Course Activities Holder	Ion Brînza PhD		
2.3. Holder of practical activities	Ion Brînza PhD		
2.4. Year of study ²		2.5. Semester ³	2.6. Type of assessment ⁴
			C
2.7. Discipline regime ⁵		2.8. Formative category of the discipline ⁶	5

3. Total estimated time

3.1. Extension of the subject in the curriculum – number of hours per week				
3.1.a.Course	3.1.b. Seminar	3.1.c. Laboratory	3.1.d. Project	Total
1	1	1		3
3.2. Extension of the subject in the curriculum – Total hours in the curriculum				
3.2.a.Course	3.2.b. Seminar	3.2.c. Laboratory	3.2.d. Project	Total ⁷
14	14	14		42
Distribution of the time fund for individual study⁸				No. of hours
Study by textbook, course material, bibliography and notes				28
Additional documentation in the library, on specialized electronic platforms and in the field				20
Preparation of seminars/laboratories, assignments, papers, portfolios and essays				24
Tutoring ⁹				7
Examination ¹⁰				4
3.3. Total hours allocated to individual study¹¹ (NOSI_{sem})				83
3.4. Total hours of the Curriculum (NOAD_{sem})				42
3.5. Total hours per semester¹² (NOAD_{sem} + NOSI_{sem})				125
3.6. No. of hours / ECTS				25
3.7. Number of credits¹³				5

4. Preconditions (where applicable)

4.1. Subjects required to be previously passed (by curriculum) ¹⁴	Animal Physiology, Cell Biology, Biochemistry, Invertebrate Biology, Invertebrate Systematics, Vertebrate Biology, Vertebrate Systematics.
4.2. Skills	

5. Conditions (where applicable)

5.1. Course Conduct ¹⁵	Classroom, equipped with laptop/desktop, video projector
5.2. Carrying out practical activities (lab/sem/pr/aplic) ¹⁶	Seminar room, equipped with laptop/desktop, video projector

6. Specific skills gained¹⁷

		Number of credits allocated to the discipline ¹⁸	Distribution of appropriations by competence ¹⁹
6.1. Professional skills	CP1	Understanding the notions related to animal physiology, the physiological processes that take place in healthy organisms under optimal conditions and stress.	
6.2. Skills Transverse	CT1	Study of the metabolic mechanisms on the basis of which they tolerate and resist the minimum and maximum variations of environmental factors.	
	CT2	Knowledge of the mechanisms of regulation and self-regulation in the relationship of the organism with the environment and the role of the human factor within these relationships.	

7. Objectives of the discipline (resulting from the grid of specific skills accumulated)

7.1. General objective	Substantiation of knowledge related to the functions of the animal organism, of the influence of factors on them. Students' knowledge of the methods of highlighting the functions of the animal organism and the techniques of their qualitative and quantitative evaluation.
7.2. Specific objectives	Application of theoretical notions in animal husbandry, in the sanogenesis of domestic and wild animals, in order to preserve the faunal diversity of ecosystems. Developing the ability to communicate using the correct language specific to the discipline.

8. Content

8.1. Course ²⁰	Teaching methods ²¹	No. of hours
Course 1 Course 1 -2 Relationship functions and the systems involved: the nervous system	Exhibition, lecture, blackboard presentation of the studied issues, use of video projector, discussions with students - Activities also	4

	carried out on the e-learning platform (e.g. Google Classroom, Google Meet, Zoom etc.)	
Course 2 Relationship Functions and Systems Involved: The Endocrine System	Exhibition, lecture, blackboard presentation of the studied issues, use of video projector, discussions with students - Activities also carried out on the e-learning platform (e.g. Google Classroom, Google Meet, Zoom etc.)	2
Course 3 Nutrition Functions and Systems Involved	Exhibition, lecture, blackboard presentation of the studied issues, use of video projector, discussions with students - Activities also carried out on the e-learning platform (e.g. Google Classroom, Google Meet, Zoom etc.)	4
Course 4 Reproductive function and the systems involved. Survival function of the species	Exhibition, lecture, blackboard presentation of the studied issues, use of video projector, discussions with students - Activities also carried out on the e-learning platform (e.g. Google Classroom, Google Meet, Zoom etc.)	4
Total course hours:		14

8.2. Practical activities (8.2.a. Seminar ²² / 8.2.b. Laboratory ²³ / 8.2.c. Project ²⁴)	Teaching methods	No. of hours
Sem 1 Phylogenetic evolution of animals: invertebrates and vertebrates	Exhibition, lecture, blackboard presentation of the studied issues, use of video projector, discussions with students - Activities also carried out on the e-learning platform (e.g. Google Classroom, Google Meet, Zoom etc.)	2
Sem 2 Phylogenetic evolution of the nervous system: invertebrates and vertebrates	Exhibition, lecture, blackboard presentation of the studied issues, use of video projector, discussions with students - Activities also carried out on the e-learning platform (e.g. Google Classroom, Google Meet, Zoom etc.)	2
Sem 3 Phylogenetic evolution of the endocrine system: invertebrates and vertebrates	Exhibition, lecture, blackboard presentation of the studied issues, use of video projector, discussions with students - Activities also carried out on the e-learning	2

	platform (e.g. Google Classroom, Google Meet, Zoom etc.)	
Sem 4 Phylogenetic evolution of the digestive system: invertebrates and vertebrates	Exhibition, lecture, blackboard presentation of the studied issues, use of video projector, discussions with students - Activities also carried out on the e-learning platform (e.g. Google Classroom, Google Meet, Zoom etc.)	2
Sem 5 Phylogenetic evolution of the respiratory system: invertebrates and vertebrates	Exhibition, lecture, blackboard presentation of the studied issues, use of video projector, discussions with students - Activities also carried out on the e-learning platform (e.g. Google Classroom, Google Meet, Zoom etc.)	2
Sem 6 Phylogenetic evolution of the circulatory system: invertebrates and vertebrates	Exhibition, lecture, blackboard presentation of the studied issues, use of video projector, discussions with students - Activities also carried out on the e-learning platform (e.g. Google Classroom, Google Meet, Zoom etc.)	2
Sem 7 Phylogenetic evolution of the reproductive system: invertebrates and vertebrates	Exhibition, lecture, blackboard presentation of the studied issues, use of video projector, discussions with students - Activities also carried out on the e-learning platform (e.g. Google Classroom, Google Meet, Zoom etc.)	2
Lab 1-2 Determining the acuity of different sensitivities in humans. Determination of pharmacokinetic properties of natural biocompounds on their absorption in the body	Practical demonstration. Use of ADMET online analytics platforms	4
Lab 3-4 Involvement of the somatic and vegetative nervous system in the adaptation of the body to the environment, somatic and vegetative reflexes. Determination of pharmacokinetic properties of natural biocompounds on the Central Nervous System	Practical demonstration. Use of ADMET online analytics platforms	4
Lab 5-6 Determinations of digestive enzyme activity. Determination of pharmacokinetic properties of natural biocompounds on their interaction with cytochrome P450	Practical demonstration. Use of ADMET online analytics platforms	4
Lab 7 Determinations of metabolic respiratory quotient. Determination of pharmacokinetic properties of natural biocompounds on general	Practical demonstration. Use of ADMET online analytics platforms	2

toxicity in the body. (Maximum tolerated dose, hepatotoxicity, skin sensitization, interaction with hERG gene (human ether-a-go-go gene))		
Total seminar/laboratory hours		28

9. Bibliography

9.1. Recommended bibliographic references	1. Hrițcu L., Hefco L., 2007, Elements of animal and human physiology. Relationship Functions, PIM Publishing House, Iași
	2. Despopoulos A., Silbernagl S., 2017, Human Physiology. Color Atlas. Callisto
	3. Babeș A., 2016 – Animal physiology – Course notes (electronic support)
	4. Flonta, Maria et al. 2008, Notions of Anatomy and Physiology, Univ. Publishing House, Bucharest
	5. Zamfir A., 2006, Animal Physiology Course, Univ. Publishing House, "Lucian Blaga", Sibiu
	6. Hritcu L. 2011, Neurophysiology – The Role of Neurotransmitters and Nervous Areas in the Modulation of Cognitive and Immune Processes, "Alexandru Ioan Cuza" University Publishing House of Iași
	7. Elaine N. Marieb_ Suzanne M. Keller, 2020, Essentials of Human Anatomy & Physiology, 13th edition-Pearson
	8. Pante, Gherghel, 2000, <i>Physiology with Behavioral Elements</i> , House of Science Books, Cluj
	9. Martha H. Stipanuk, 2018, Marie A. Caudill, Biochemical, Physiological, and Molecular Aspects of Human Nutrition, 4th Edition, Elsevier
9.2. Additional bibliographic references	10. Ardelean, G., Roșioru, C., 1996, <i>Integration and coordination of the animal organism</i> , Univ. Publishing House, Baia Mare
	11. Ognean, L., N. Dojană, Corina Roșioru, 2000, <i>Animal Physiology</i> , vol. I, University Press Publishing House, Cluj-Napoca
	12. Fowler S. Roush R. Wise J., 2013, Concept of biology, OpenStax
	13. Eric P. Widmaier, Hershel Raff, Kevin T. Strang, Eric Widmaier - MP, Vander et al's, 2003, Human Physiology -McGraw-Hill Science_Engineering_Math
	14. Năstăsescu, Gh., 1986, Animal Physiology, Ed. Did. and Ped. Bucharest

10. Corroborating the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and employers representative of the field related to the program²⁵

It is done through periodic contacts with them in order to analyze the problem.

11. Assessment

Activity Type	11.1 Evaluation criteria	11.2 Evaluation methods		11.3 Weight of the final grade	Obs. ²⁶
11.4a Exam / Colloquium	• Theoretical and practical knowledge acquired (quantity, correctness, accuracy)	Tests along the way ²⁷ :	%	70% (minimum 5)	
		Homework:	%		
		Other activities ²⁸ :	%		
		Final evaluation:	% (min. 5)		



11.4b Seminar	<ul style="list-style-type: none"> • Frequency/relevance of interventions or responses 	Record of interventions, portfolio of works (reports, scientific syntheses)	15% (minimum 5)	
11.4c Laboratory	<ul style="list-style-type: none"> • Knowledge of the equipment, how to use specific tools; evaluation of tools or achievements, processing and interpretation of results 	<ul style="list-style-type: none"> • Oral answer • Written questionnaire • Laboratory notebook, experimental papers, reports, etc. • Practical demonstration 	15% (minimum 5)	
11.4d Project	<ul style="list-style-type: none"> • The quality of the project carried out, the correctness of the project documentation, the justification of the chosen solutions 	<ul style="list-style-type: none"> • Self-assessment, presentation and/or support of the project • Critical evaluation of a project 	% (minimum 5)	
11.5 Minimum Performance Standard ²⁹				

The subject sheet includes components adapted to people with SEN (people with disabilities and people with high potential), depending on their type and degree, at the level of all curricular elements (competences, objectives, contents, teaching methods, alternative assessment), in order to ensure fair opportunities in the academic preparation of all students, paying close attention to individual learning needs.

Date of completion: 11 / 09 / 2024

Date of approval in the Department: 17 / 09 / 2024

	Teaching degree, title, first name, last name	Signature
Discipline holder	Ion Brînza, PhD	
Responsible Degree program	Assoc. Prof. Ana-Maria Benedek-Sîrbu, Ph.D.	
Department Director	Lecturer Ioan Tăușan, PhD	

¹ Bachelor's/Master's degree

² 1-4 for bachelor's degree, 1-2 for master's degree

³ 1-8 for bachelor's degree, 1-3 for master's degree

⁴ Exam, colloquium or VP A/R – from the curriculum

⁵ Discipline regime: O=Compulsory discipline; A=Optional subject; U=Optional

⁶ Training category: S = Specialty; F=Fundamental; C=Complementary; I=Fully assisted; P=Partially assisted; N=Unassisted

⁷ It is equal to 14 weeks x the number of hours in point 3.1 (similar for 3.2.a.b.c.)

⁸ The lines below refer to individual study; the total is completed in point 3.37.

⁹ Between 7 and 14 hours

¹⁰ Between 2 and 6 hours

¹¹ The sum of the values on the previous lines, which refer to the individual study.

¹² The sum (3.5.) between the number of hours of direct teaching activity (NOAD) and the number of hours of individual study (NOSI) must be equal to the number of credits allocated to the discipline (point 3.7) x the number of hours per credit (3.6.)

¹³ The credit number is calculated according to the following formula and rounded to whole neighboring values (either by decreasing or increasing

$$\text{No.credits} = \text{NOCpSpD} \times \text{CC} + \text{NOApSpD} \times \text{CATOCpSdP} \times \text{CC} + \text{TOApSdP} \times \text{CA} \times 30 \text{ credits}$$

Where:

- NOCpSpD = Number of hours of course/week/discipline for which credits are calculated
- NOApSpD = Number of Application Hours (Week/Lab/Pro.) /week/discipline for which credits are calculated
- TOCpSdP = Total number of course hours/week in the plan
- TOApSdP = Total number of application hours (week/lab/pro.) /week of plan
- CC/CA = Course coefficients/applications calculated according to the table

Coefficients	Course	Applications (S/L/P)
Bachelor	2	1
Master	2,5	1,5
Bachelor - foreign language	2,5	1,25

¹⁴ It mentions the subjects that must be previously passed or equivalent

¹⁵ Whiteboard, video projector, flipchart, specific teaching materials, online platforms, etc.

¹⁶ Computer technology, software packages, experimental stands, online platforms, etc.

¹⁷ Competencies in the Grids related to the description of the study program, adapted to the specificity of the discipline

¹⁸ From the curriculum

¹⁹ The credits allocated to the discipline are distributed by professional and transversal competences depending on the specificity of the discipline

²⁰ Chapter and paragraph titles

²¹ Exposition, lecture, presentation of the studied issues on the board, use of the video projector, discussions with the students (for each chapter, if applicable)

²² Discussions, debates, presentation and/or analysis of papers, resolution of exercises and problems

²³ Practical demonstration, exercise, experiment

²⁴ Case study, demonstration, exercise, error analysis, etc.

²⁵ The connection with other disciplines, the usefulness of the discipline on the labor market

²⁶ CPE – conditions participation in the exam; nCPE – does not condition participation in the exam; CEF - conditions the final evaluation; N/A – not applicable

²⁷ The number of tests and the weeks in which they will be taken will be specified.

²⁸ Scientific circles, professional competitions, etc.

²⁹ The minimum performance standard from the competence grid of the study program is customized to the specificity of the discipline, if applicable.