COURSE SYLLABUS

Academic year 2025 - 2026

1. Programme Information

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 Sports
1.4. Field of study	Biology
1.5. Level of study [i]	Bachelor
1.6. Programme of study	Biology (in english)

2. Details about the course

2.1. Name of course	Functions of nutrition, relation and reproduction in animals		Cod	FSTI.MFE.BIOEN.L.SA.5.1110.C-5.5	
2.2. Course coordinator	Lector univ.dr. Ioan Tăușan				
2.3. Seminar / laboratory coordinator	Asist. univ. dr. Brînza Ion				
2.4. Year of study[ii]	3	**2.5.** Semester[iii]	1	**2.6.** Evaluation form [iv]	Test
2.7. Course type [v]	A	**2.8.** The formative category of the course [vi]			E

3. Estimated total time

3.1. Course Extension within the Curriculum – Number of Hours per Week					
3.1.a.Lecture	3.1.b. Seminar	3.1.c. Laboratory	3.1.d. Project	3.1.e Other	Total
1	1	1			**3**
3.2. Course Extension within the Curriculum – Total Number of Hours within the Curriculum					
3.2.a.Lecture	3.2.b. Seminar	3.2.c. Laboratory	3.2.d. Project	3.2.e Other	Total[vii]
14	14	14			**42**

Time Distribution for Individual Study [viii]	**Hours**
Learning by using course materials, references and personal notes	15
Additional learning by using library facilities, electronic databases and on-site information	4
Preparing seminars / laboratories, homework, portfolios and essays	8
Tutorial activities [ix]	2
Exams[x]	4

3.3. Total Individual Study Hours [xi] ***(NOSI$_{sem}$)***	**83**
3.4. Total Hours in the Curriculum (*NOAD$_{sem}$*)	**42**
3.5. Total Hours per Semester [xii] **(*NOAD$_{sem}$* + *NOSI$_{sem}$*)**	**125**
3.6. No. of hours / ECTS	**25**
3.7. Number of credits[xiii]	**5**

4. Prerequisites (if needed)

4.1. Courses that must be successfully completed first (from the curriculum) [xiv]	Animal Physiology, Cell Biology, Biochemistry, Invertebrate Biology, Invertebrate Systematics, Vertebrate Biology, Vertebrate Systematic
4.2. Competencies	

5. Conditions (wherever applicable)

5.1. For course/lectures [xv]	Classroom, equipped with laptop/desktop, video projector
5.2. For practical activities (lab/sem/pr/other) [xvi]	Seminar room, equipped with laptop/desktop, video projector

6. Learning outcomes [xvii]

Number of credits assigned to the discipline: 5				
Learning outcomes				Credit allocation based on learning outcomes
No.	Knowledge	Aptitudes	Responsibility and autonomy	
LO 1	The student/graduate describes, defines, and discusses fundamental principles in the field of Biology, as well as interdisciplinary aspects (e.g., evolutionary theory, animal physiology).	The student/graduate applies working methods using modern instruments/equipment and classical laboratory techniques in order to carry out and design experiments, to record, and to appropriately analyse the results obtained.	The student uses their own knowledge and experience to contribute to the scientific community and society at large by participating in professional and/or community activities.	1
LO 2	The student correctly uses and explains the terminology specific to Biology, the main concepts and laws, and the characteristics of biological systems from the perspective of the principles of organisation and functioning of living matter.	The student/graduate defines, describes, and discusses/presents the major concepts in Biology.	The student/graduate demonstrates responsibility and autonomy in using scientific knowledge in Biology by conducting research, developing or improving concepts, and making ethical and professional decisions within the scientific process.	1
LO 3	The student/graduate defines, explains, and exemplifies basic and modern experimental techniques in the analysis and	The student/graduate uses, investigates, and critically analyses the operating principles and use of equipment/instruments and working techniques/methods for	The student/graduate applies the knowledge learned in other courses to explain the interactions of organisms with the environment.	1

	characterization of biological systems, records and presents experimental results, and explains the principles of scientific methods.	investigating the functioning of biological systems.		
LO 4	The student/graduate demonstrates the ability to operate with scientific means of documentation and literature searching, critically evaluates the scientific literature, develops arguments supported by scientific evidence, and clearly communicates that information in a variety of formats (models, tables, graphs, mathematical equations, etc.).	-	-.	1
LO 5	The student/graduate demonstrates the ability to operate with appropriate methods of information/ documentation/knowledge and to instruct pupils, colleagues, students, and other persons in a scientific manner.	-	-	1

7. Course objectives (resulted from developed competencies)

7.1. Main course 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 course 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. Course description

8.1. Lecture[xviii]		**Teaching methods** [xix]	**Hours**
Lecture 1	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 carried out on the e-learning platform (e.g. Google ClassRoom, Google Meet, Zoom etc.)	4
Lecture 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
Lecture 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
Lecture 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 lecture hours:	**14**

8.2. Practical activities

8.2.a. Seminar		**Teaching methods** [xx]	**Hours**
Seminar 1	Phylogenetic evolution of analyzers: invertebrates and vertebrates	Exhibition, lecture, blackboard presentation of the studied issues, use of video projector, discussions with students - Activities also	2

		carried out on the e-learning platform (e.g. Google ClassRoom, Google Meet, Zoom etc.)	
Seminar 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
Seminar 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 platform (e.g. Google ClassRoom, Google Meet, Zoom etc.)	2
Seminar 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
Seminar 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
Seminar 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	2

		carried out on the e-learning platform (e.g. Google ClassRoom, Google Meet, Zoom etc.)	
Seminar 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
		Total seminar hours	14

8.2.b. Laborator		**Teaching methods** [xxi]	**Hours**
Laboratory 1	Determination of the acuity of different human sensory modalities. Determination of pharmacokinetic properties of selected natural biocompounds regarding their absorption in the organism.	Practical demonstration. Use of online ADME/ADMET analysis platforms	4
Laboratory 2	Role of the somatic and autonomic nervous systems in organismal adaptation to the environment; somatic and autonomic reflexes. Determination of pharmacokinetic properties of natural biocompounds related to the central nervous system (CNS).	Practical demonstration. Use of online ADME/ADMET analysis platforms	4
Laboratory 3	Determinations of digestive enzyme activity. Determination of pharmacokinetic properties of natural biocompounds concerning their interaction with cytochrome P450.	Practical demonstration. Use of online ADME/ADMET analysis platforms	4
Laboratory 4	Determination of the respiratory quotient (RQ). Determination of pharmacokinetic properties of natural biocompounds related to overall (systemic) toxicity (maximum tolerated dose, hepatotoxicity, skin sensitization, interaction with hERG—human ether-à-go-go-related gene).	Practical demonstration. Use of online ADME/ADMET analysis platforms	2
		Total laboratory hours	14

9. Bibliography

9.1. Recommended references	Hrițcu L, Hefco L., 2007, Elements of animal and human physiology. Relationship Functions, PIM Publishing House, Iași
	Despopoulos A., Silbernagl S., 2017, Human Physiology. Color Atlas. Callisto
	Babeș A., 2016 – Animal physiology – Course notes (electronic support)
	Flonta, Maria et al. 2008, Notions of Anatomy and Physiology, Univ. Publishing House, Bucharest

	Zamfir A., 2006, Animal Physiology Course, Univ. Publishing House, "Lucian Blaga", Sibiu
	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
	Elaine N. Marieb_ Suzanne M. Keller, 2020, Essentials of Human Anatomy & Physiology, 13th edition-Pearson
	Pante, Gherghel, 2000, *Physiology with Behavioral Elements*, House of Science Books, Cluj
	Martha H. Stipanuk, 2018, Marie A. Caudill, Biochemical, Physiological, and Molecular Aspects of Human Nutrition, 4th Edition, Elsevier
9.2. Additional references	Ardelean, G., Roşioru, C., 1996, *Integration and coordination of the animal organism*, Univ. Publishing House, Baia Mare
	Ognean, L., N. Dojană, Corina Roşioru, 2000, *Animal Physiology*, vol. I, University Press Publishing House, Cluj-Napoca
	Fowler S. Roush R. Wise J., 2013, Concept of biology, OpenStax
	Eric P. Widmaier, Hershel Raff, Kevin T. Strang, Eric Widmaier - MP, Vander et al's, 2003, Human Physiology -McGraw-Hill Science_Engineering_Math
	Năstăsescu, Gh., 1986, Animal Physiology, Ed. Did. and Ped. Bucharest

10. Conjunction of the discipline's content with the expectations of the epistemic community, professional associations and significant employers of the specific study program [xxii]

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

11. Evaluation

Activity Type	11.1 Evaluation Criteria	11.2 Evaluation Methods		11.3 Percentage in the Final Grade	Notes. [xxiii]
11.4a Exam / Coloquium	• Theoretical and practical knowledge acquired (quantity, correctness, accuracy)	Tests during the semester [xxiv]:	%	70% (minimum 5)	
		Homework:	%		
		Other activities[xxv]:	%		
		Final evaluation:	% (min. 5)		
11.4b Seminar	• Frequency/relevance of participation or responses	Evidence of participation, portfolio of papers (reports, scientific summaries)		15% (minimum 5)	
11.4c Laboratory	• Knowledge of the equipment, how to use specific tools; evaluation of tools, processing and interpretation of results	• Oral response • Written questionnaire • Laboratory notebook, experimental works, reports, etc. • Practical demonstration		15% (minimum 5)	
11.4d Project	• The quality of the project, the correctness of the project documentation, the appropriate justification of the chosen solutions	• Self-evaluation, project presentation • Critical evaluation of a project		% (minimum 5)	
11.5 Minimum performance standard[xxvi]					

Acquisition of the basic concepts from each chapter studied, and mandatory passing of the continuous assessments and the laboratory exam.	

The Course Syllabus will encompass components adapted to persons with special educational needs (SEN – people with disabilities and people with high potential), depending on their type and degree, at the level of all curricular elements (skills, objectives, contents, teaching methods, alternative assessment), in order to ensure fair opportunities in the academic training of all students, paying close attention to individual learning needs.

Filling Date: |_11_| / |_09_| / |_2025_|

Department Acceptance Date: |_17_| / |_09_| / |_2025_|

	Academic Rank, Title, First Name, Last Name	**Signature**
Course Teacher	Lecturer Ioan Tăușan, PhD	
Study Program Coordinator	Assoc. Prof. Ana-Maria Benedek-Sîrbu, PhD	
Head of Department	Lecturer Ioan Tăușan, PhD	

[i] *Bachelor / Master*

[ii] *1-4 for bachelor, 1-2 for master*

[iii] *1-8 for bachelor, 1-4 for master*

[iv] *Exam, colloquium or VP A/R - from the curriculum*

[v] *Course type: R = Compulsory course; E = Elective course; O = Optional course*

[vi] *Formative category: S = Specialty; F = Fundamental; C = Complementary; I = Fully assisted; P = Partially assisted; N = Unassisted*

[vii] *Equal to 14 weeks x number of hours from point 3.1 (similar to 3.2.a.b.c.)*

[viii] *The following lines refer to individual study; the total is completed at point 3.7.*

[ix] *Between 7 and 14 hours*

[x] *Between 2 and 6 hours*

[xi] *The sum of the values from the previous lines, which refer to individual study.*

[xii] *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 assigned to the discipline (point 3.7) x no. hours per credit (3.6.)*

[xiii] *The credit number is computed according to the following formula, being rounded to whole neighbouring values (either by subtraction or addition*

$$No.credits = \frac{NOCpSpD \times C_C + NOApSpD \times C_A}{TOCpSdP \times C_C + TOApSdP \times C_A} \times 30\ credits$$

Where:

- NOCpSpD = Number of lecture hours / week / discipline for which the credits are calculated
- NOApSpD = Number of application hours (sem./lab./pro.) / week / discipline for which the credits are calculated
- TOCpSdP = Total number of course hours / week in the Curriculum
- TOApSdP = Total number of application hours (sem./lab./pro.) / week in the Curriculum
- C_C/C_A = 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

[xiv] *The courses that should have been previously completed or equivalent will be mentioned*

[xv] *Board, video projector, flipchart, specific teaching materials, online platforms, etc.*

[xvi] *Computing technology, software packages, experimental stands, online platforms, etc.*

[xvii] *The learning outcomes will be stated in accordance with the specific standards of the ARACIS expert commissions (https://www.aracis.ro/ghiduri/)*

[xviii] *Chapter and paragraph titles*

[xix] *Exposition, lecture, board presentation of the studied topic, use of video projector, discussions with students (for each chapter, if applicable)*

[xx] *Discussions, debates, presentations and/or analyses of papers, solving exercises and problems*

[xxi] *Practical demonstration, exercise, experiment*

[xxii] *The relationship with other disciplines, the usefulness of the discipline on the labour market*

[xxiii] *CPE – Conditions Exam Participation; nCPE – Does Not Condition Exam Participation; CEF - Conditions Final Evaluation; N/A – not applicable*

[xxiv] *The number of tests and the weeks in which they will be taken will be specified*

[xxv] *Scientific circles, professional competitions, etc.*

[xxvi] *The minimum performance standard in the competence grid of the study program is customized to the specifics of the discipline, if applicable*