

## SYLLABUS

Academic year 2025 - 2026

### 1. Details about the program

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. Study cycle <sup>1</sup>	BACHELOR
1.6. Specialization	BIOLOGY

### 2. Details about the course

2.1. Course name	VERTEBRATE BIOLOGY	Code	FSTI.MFE.BIOEN.L.FO.4.2020.E-4.2
2.2. Course coordinator	Assoc. Prof. Ana-Maria Benedek-Sîrbu, PhD		
2.3. Practical activity coordinator	Assoc. Prof. Ana-Maria Benedek-Sîrbu, PhD		
2.4. Year of study <sup>2</sup>	2	2.5. Semester <sup>3</sup>	4
2.6. Type of assessment <sup>4</sup>	E		
2.7. Type of discipline <sup>5</sup>	O	2.8. Formative category of the discipline <sup>6</sup>	S

### 3. Estimated total time

3.1. Proportion of the discipline within the curriculum – <i>number of hours / week</i>					
3.1.a.Lecture	3.1.b. Seminar	3.1.c. Laboratory	3.1.d. Project	3.1.e Other	Total
2	-	2	-	-	4
3.2. Proportion of the discipline within the curriculum – <i>number of hours / week</i>					
3.2.a.Lecture	3.2.b. Seminar	3.2.c. Laboratory	3.2.d. Project	3.2.e Other	Total <sup>7</sup>
28	-	28	-	-	56
<b>Allocation of time budget for individual study<sup>8</sup></b>					<b>No. hours</b>
Study based on textbook, lecture notes, bibliography and course notes					10
Additional research: library, specialized electronic platforms and field or on-site investigation and documentation					10
Preparing for the seminar / laboratorires, home assignments, reports, portfolios and essays					10
Tutoring <sup>9</sup>					10
Examinations <sup>10</sup>					4
<b>3.3. Total number of hours for individual study<sup>11</sup> (<math>NOSI_{sem}</math>)</b>					<b>44</b>
<b>3.4. Total number of hours in the curriculum (<math>NOAD_{sem}</math>)</b>					<b>56</b>
<b>3.5. Total number of hours per semester<sup>12</sup> (<math>NOAD_{sem} + NOSI_{sem}</math>)</b>					<b>100</b>
<b>3.6. No of hours / ECTS</b>					<b>25</b>
<b>3.7. Number of credits<sup>13</sup></b>					<b>4</b>

**4. Prerequisites** (if applicable)

4.1. Prerequisite courses for enrollment to this subject (from the curriculum) <sup>14</sup>	
4.2. Competencies	knowledge of fundamental notions of animal taxonomy and systematics

**5. Requirements** (wherever applicable)

5.1. Lecture organization and structure <sup>15</sup>	course room with computer and video projector
5.2. Organization and structure of practical activities (lab/sem/pr/other) <sup>16</sup>	vertebrate biology lab with biological material, identification keys and atlases

**6. Learning outcomes**<sup>17</sup>

Number of credits assigned to the discipline: 4				
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., evolutionism, general ecology, plant physiology, animal physiology).	The student/graduate applies working methods using modern tools/equipment and classic laboratory techniques to perform, design experiments, record, and appropriately analyzes the results obtained.	The student/graduate uses their own knowledge and experience to contribute to the development of the scientific community and society in general by participating in professional and/or community activities.	2
LO 2	The student/graduate correctly uses and explains the specific terminology used in the field of Biology, the main concepts and laws, the characteristics of biological systems from the perspective of the principles of organization and functioning of living matter.	The student/graduate defines, describes, discusses/presents the major concepts in the field of Biology.	The student/graduate demonstrates responsibility and autonomy in the use of scientific knowledge in the field of Biology, by conducting research, developing or improving concepts, theories, operational methods, or biotechnological products, making ethical and professional decisions within the scientific process.	2

**7. Course objectives** (reflected by the framework of specific competencies)

7.1. General objective	Presentation of different aspects concerning the main amniotic vertebrate taxa and their representatives
7.2. Specific objectives	Description of the structures of amniotic vertebrates and their evolution in relation to environment and way of life. Presenting the amniotic vertebrate diversity worldwide with focus on Romanian fauna.

## 8. Course description

8.1. Lecture <sup>18</sup>		Teaching methods <sup>19</sup>	No. of hours
Lecture 1	Amniotic tetrapods – general characteristics, origin	Interactive lecture, explanation, conversation, problematisation	2
Lecture 2	Class Reptilia - general characteristics, origin, biology	Interactive lecture, explanation, conversation, problematisation	2
Lecture 3	Class Reptilia – phylogeny and classification	Interactive lecture, explanation, conversation, problematisation	2
Lecture 4	Class Aves - morphology and anatomy, adaptations	Interactive lecture, explanation, conversation, problematisation	2
Lecture 5	Class Aves - biogeography and migrations	Interactive lecture, explanation, conversation, problematisation	2
Lecture 6	Class Aves – ecology and behaviour	Interactive lecture, explanation, conversation, problematisation	2
Lecture 7-8	Class Aves – phylogeny and classification	Interactive lecture, explanation, conversation, problematisation	4
Lecture 9-10	Class Mammalia - morphology and anatomy, adaptations	Interactive lecture, explanation, conversation, problematisation	4
Lecture 11-12	Class Mammalia – ecology and behaviour	Interactive lecture, explanation, conversation, problematisation	4
Lecture 13-14	Class Mammalia – phylogeny and classification	Interactive lecture, explanation, conversation, problematisation	4
			<b>Total number of lecture hours:</b>
			<b>28</b>

8.2. Practical activities	Teaching methods	No. of hours
Lab. 1. Amniotic tetrapods – general characteristics	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 2. Class Reptilia - general characteristics, morphology and anatomy	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 3. Class Reptilia – classification and representatives	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collections	2
Lab. 4. Class Aves - morphology and anatomy, adaptations	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 5. Class Aves – ecology and behaviour (documentaries and field applications)	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 6-8. Class Aves – classification and representatives	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collections, field trips,	6
Lab. 9-10. Class Mammalia - morphology and anatomy, adaptations	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	4

Lab. 11. Class Mammalia – ecology and behaviour (documentaries and field applications)	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 12-14. Class Mammalia – classification and representatives	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collections, field trips	6
<b>Total number of hours: laboratory</b>		<b>28</b>

## 9. Bibliography

9.1. Recommended references	1. Linzey, D. <i>Vertebrate Biology</i> , 2011, Johns Hopkins University Press, pp. 608.
	2. Hutchins, M. (Series editor), 2003 - <i>Grzimek's Animal Life Encyclopedia</i> , Vol. 4 – 14. Second edition, Thompson Gale.
9.2. Additional references	3. Attenborough, D., 2002 - <i>Life of Mammals</i> . BBC Books.

## 10. Correlating the course description with the expectations and requirements of representatives of the epistemic community, professional associations and significant employers and stakeholders related to the study program and the specific area<sup>20</sup>

The course content enables students to obtain skills of understanding and reproduction of the terms, concepts and principles of vertebrate biology, gives them the ability to communicate using the specific scientific language and to explain the structure of vertebrates and its evolution in relation to their environment and way of life and the ability to identify in the field or in the collections the vertebrates from Romania. It stimulates the participation in collective work / research and professional development of original ideas.

## 11. Evaluation

Type of activity	11.1 Assessment criteria	11.2 Assessment methods		11.3 Percentage of the final grade	Notes. <sup>21</sup>
11.4a Exam / Colloquium	• Theoretical and practical knowledge (quantity, correctness, accuracy)	Midterm / ongoing assignments <sup>22</sup> :	10%	50%	
		Home assignments:	%		
		Other activities <sup>23</sup> :	%		
		Final assessment:	90%		
11.4c Laboratory	• Knowledge of equipment, methods of using specific instruments and tools; assessment of tools or achievements, processing and interpretation of results	• Practical exam		50%	
11.5 Minimum performance standard <sup>24</sup>					
- knowledge of the main characters of vertebrate classes or subclasses					
- identification and systematical framing of the main vertebrate species from Romania					

*The course description includes components adapted to SEN (Special Educational Needs) persons, according to their type and degree, at all curricular elements and dimensions (competencies, objectives, course description, teaching methods, alternative assessment), in view of providing and ensuring equitable and fair opportunities to academic education for all students, with special attention to special educational needs.*

Date of submission: 15 / 09 / 2025

Date of approval in the Department: 17 / 09 / 2025

	Degree, title, first name, surname	Signature
Course Teacher	Assoc. Prof. Ana-Maria Benedek-Sîrbu, PhD	
Study Program Coordinator	Assoc. Prof. Ana-Maria Benedek-Sîrbu, PhD	
Head of Department	Lecturer Ioan Tăușan, PhD	

<sup>1</sup> Licență / Master

<sup>2</sup> 1-4 pentru licență, 1-2 pentru master

<sup>3</sup> 1-8 pentru licență, 1-3 pentru master

<sup>4</sup> Examen, colocviu sau VP A/R – din planul de învățământ

<sup>5</sup> Regim disciplină: O=Disciplină obligatorie; A=Disciplină opțională; U=Facultativă

<sup>6</sup> Categoria formativă: S=Specialitate; F=Fundamentală; C=Complementară; I=Asistată integral; P=Asistată parțial; N=Neasistată

<sup>7</sup> Este egal cu 14 săptămâni x numărul de ore de la punctul 3.1 (similar pentru 3.2.a.b.c.d.e.)

<sup>8</sup> Liniile de mai jos se referă la studiul individual; totalul se completează la punctul 3.37.

<sup>9</sup> Între 7 și 14 ore

<sup>10</sup> Între 2 și 6 ore

<sup>11</sup> Suma valorilor de pe liniile anterioare, care se referă la studiul individual.

<sup>12</sup> Suma (3.5.) dintre numărul de ore de activitate didactică directă (NOAD) și numărul de ore de studiu individual (NOSI) trebuie să fie egală cu numărul de credite alocate disciplinei (punctul 3.7) x nr. ore pe credit (3.6.)

<sup>13</sup> Numărul de credit se calculează după formula următoare și se rotunjește la valori vecine întregi (fie prin micșorare fie prin majorare)

$$\text{Nr. credite} = \frac{\text{NOCpSpD} \times C_C + \text{NOApSpD} \times C_A}{\text{TOCpSpD} \times C_C + \text{TOApSpD} \times C_A} \times 30 \text{ credite}$$

Unde:

- NOCpSpD = Număr ore curs/săptămână/disciplina pentru care se calculează creditele
- NOApSpD = Număr ore aplicații (sem./lab./pro.)/săptămână/disciplina pentru care se calculează creditele
- TOCpSpD = Număr total ore curs/săptămână din plan
- TOApSpD = Număr total ore aplicații (sem./lab./pro.)/săptămână din plan
- C<sub>C</sub>/C<sub>A</sub> = Coeficienți curs/aplicații calculate conform tabelului

Coeficienți	Curs	Aplicații (S/L/P)
Licență	2	1
Master	2,5	1,5
Licență lb. străină	2,5	1,25

<sup>14</sup> Se menționează disciplinele obligatoriu a fi promovate anterior sau echivalente

<sup>15</sup> Tablă, videoproiector, flipchart, materiale didactice specifice, platforme on-line etc.

<sup>16</sup> Tehnică de calcul, pachete software, standuri experimentale, platforme on-line etc.

<sup>17</sup> The learning outcomes will be stated in accordance with the specific standards of the ARACIS expert commissions (<https://www.aracis.ro/ghiduri/>)

<sup>18</sup> Titluri de capitole și paragrafe

<sup>19</sup> Expunere, prelegere, prezentare la tablă a problematicei studiate, utilizare videoproiector, discuții cu studenții (pentru fiecare capitol, dacă este cazul)

<sup>20</sup> Legătura cu alte discipline, utilitatea disciplinei pe piața muncii

<sup>21</sup> CPE – condiționează participarea la examen; nCPE – nu condiționează participarea la examen; CEF - condiționează evaluarea finală; N/A – nu se aplică

<sup>22</sup> Se va preciza numărul de teste și săptămânile în care vor fi susținute.

<sup>23</sup> Cercuri științifice, concursuri profesionale etc.

<sup>24</sup> Se particularizează la specificul disciplinei standardul minim de performanță din grila de competențe a programului de studii, dacă este cazul.