

## SYLLABUS

Academic year 2023 - 2024

### 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	<b>VERTEBRATE SYSTEMATICS</b>	Code	FSTI.MFE.BIOEN.L.SO.3.2020.E-4.3
2.2. Course coordinator	Assoc. Prof. Ana Maria Benedek-Sîrbu, PhD		
2.3. Practical activity coordinator	Miruna Gritu, PhD		
2.4. Year of study <sup>2</sup>	2	2.5. Semester <sup>3</sup>	3
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	-	-	<b>4</b>
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	-	-	<b>56</b>
<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> (NOSI<sub>sem</sub>)</b>					<b>44</b>
<b>3.4. Total number of hours in the curriculum (NOAD<sub>sem</sub>)</b>					<b>56</b>
<b>3.5. Total number of hours per semester<sup>12</sup> (NOAD<sub>sem</sub> + NOSI<sub>sem</sub>)</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. Specific competencies<sup>17</sup>

		Number of credits assigned to the discipline <sup>18</sup>	4	Distribution of credits according to competencies <sup>19</sup>
<b>6.1. Professional competencies</b>	CP1	Define the basic concepts, theories and methods in the field of anamniotic vertebrate biology in order to facilitate the connections required in the field of biology		1
	CP2	Use of logical connections with other related basic scientific fields.		0.5
	CP3	Analyse and communicate scientific information.		0.5
	CP4	Using logical connections with other related fundamental scientific fields		1
<b>6.2. Transversal competencies</b>	CT1	Implementation of effective and responsible work strategies, punctuality, reliability and personal responsibility, based on principles, norms and values of professional ethics code.		0.25
	CT2	Efficient work in multidisciplinary team on different hierarchical levels		0.25
	CT3	Documentation in English language for professional and personal development through training and effective adaptation to new scientific discoveries		0.5

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

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

#### 8. Course description

8.1. Lecture <sup>20</sup>		Teaching methods <sup>21</sup>	No. of hours
Lecture 1	Phylum Chordata – general characterization and origin	Interactive lecture, explanation, conversation, problematisation	2

Lecture 2	Subphylum Cephalochordata - general characterization	Interactive lecture, explanation, conversation, problematisation	2
Lecture 3	Subphylum Urochordata - general characterization, systematic, biology	Interactive lecture, explanation, conversation, problematisation	2
Lecture 4	Subphylum Vertebrata - general characterization, origin, principles of classification	Interactive lecture, explanation, conversation, problematisation	2
Lecture 5	Agnatha – morphology, anatomy, biology, adaptations, phylogeny, classification	Interactive lecture, explanation, conversation, problematisation	2
Lecture 6	Gnathostomata - general characterization and origin, classification	Interactive lecture, explanation, conversation, problematisation	2
Lecture 7	Class Chondrichthyes -- morphology, anatomy, biology, adaptations	Interactive lecture, explanation, conversation, problematisation	2
Lecture 8	Class Chondrichthyes – conservation, phylogeny and classification	Interactive lecture, explanation, conversation, problematisation	2
Lecture 9	Class Osteichthyes – morphology, anatomy, biology, adaptations	Interactive lecture, explanation, conversation, problematisation	2
Lecture 10	Class Osteichthyes – ecology and conservation	Interactive lecture, explanation, conversation, problematisation	2
Lecture 11	Class Osteichthyes – phylogeny, classification	Interactive lecture, explanation, conversation, problematisation	2
Lecture 12	Class Amphibia - morphology, anatomy, biology, adaptations	Interactive lecture, explanation, conversation, problematisation	2
Lecture 13	Class Amphibia – ecology and conservation	Interactive lecture, explanation, conversation, problematisation	2
Lecture 14	Class Amphibia - phylogeny, classification	Interactive lecture, explanation, conversation, problematisation	2
			<b>Total number of lecture hours: 28</b>

8.2. Practical activities (8.2.a. Seminar <sup>22</sup> / 8.2.b. Laboratory <sup>23</sup> / 8.2.c. Project <sup>24</sup> / 8.2.d. Other practical activities <sup>25</sup> )	Teaching methods	No. of hours
Lab. 1. Phylum Chordata – general characterization	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 2. Subphylum Cephalochordata - general characterization and description of <i>Branchiostoma lanceolatum</i>	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 3. Subphylum Urochordata - general characterization, classification and representatives	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 4. Subphylum Vertebrata - general characterization and classification	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 5. Agnatha – morphology, classification and representatives	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2

Lab. 6. Gnathostomata - general characterization, classification	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 7. Class Chondrichthyes – morphology and anatomy	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 8. Class Chondrichthyes - classification and representatives	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 9. Class Osteichthyes – morphology and anatomy	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 10-11. Class Osteichthyes - classification and representatives	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	4
Lab. 12. Class Amphibia - morphology and anatomy	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 13. Class Amphibia – classification and representatives	explanation, conversation, problematisation, dialogue, use of drawings, use of biological material in the vertebrate collection	2
Lab. 14. Practical exam		2
<b>Total number of hours: seminar/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	

## 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>26</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>27</sup>
11.4a Exam / Coloquium	• Theoretical and practical knowledge (quantity, correctness, accuracy)	Midterm / ongoing assignments <sup>28</sup> :	%	67%	
		Home assignments:	%		
		Other activities <sup>29</sup> :	%		
		Final assessment:	100%		
11.4c Laboratory	• Knowledge of equipment, methods of using specific instruments and tools; assessment of tools or	• Practical exam		33%	



	achievements, processing and interpretation of results			
11.5 Minimum performance standard <sup>30</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: 25 / 09 / 2023

Date of approval in the Department: 19 / 10 / 2023

	Degree, title, first name, surname	Signature
Course coordinator	Assoc. Prof. Ana-Maria Benedek-Sîrbu, PhD	
Study program coordinator	Assoc. Prof. Ana-Maria Benedek-Sîrbu, PhD	
Director Department	Lecturer PhD. Voichița GHEOCA	

<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)

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

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
- TOCpSdP = Număr total ore curs/săptămână din plan
- TOApSdP = 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> Competențele din Grilele aferente descrierii programului de studii, adaptate la specificul disciplinei

<sup>18</sup> Din planul de învățământ

<sup>19</sup> Creditele alocate disciplinei se distribuie pe competențe profesionale și transversale în funcție de specificul disciplinei

<sup>20</sup> Titluri de capitole și paragrafe

<sup>21</sup> Expunere, prelegere, prezentare la tablă a problematicii studiate, utilizare videoproiector, discuții cu studenții (pentru fiecare capitol, dacă este cazul)

<sup>22</sup> Discuții, dezbateri, prezentare și/sau analiză de lucrări, rezolvare de exerciții și probleme etc.

<sup>23</sup> Demonstrație practică, exercițiu, experiment etc.

<sup>24</sup> Studiu de caz, demonstrație, exercițiu, analiza erorilor etc.

<sup>25</sup> Alte tipuri de activități practice specifice

<sup>26</sup> Legătura cu alte discipline, utilitatea disciplinei pe piața muncii

<sup>27</sup> CPE – condiționează participarea la examen; nCPE – nu condiționează participarea la examen; CEF - condiționează evaluarea finală; N/A – nu se aplică

<sup>28</sup> Se va preciza numărul de teste și săptămânile în care vor fi susținute.

<sup>29</sup> Cercuri științifice, concursuri profesionale etc.

<sup>30</sup> Se particularizează la specificul disciplinei standardul minim de performanță din grila de competențe a programului de studii, dacă este cazul.