

2024-2024

ZOOLOGY

UNIVERSITY OF ZAGREB
FACULTY OF VETERINARY MEDICINE
Heinzelova 55
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Basic, natural and preclinical science division
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Register no.: 61-02-299/2024

Zagreb, 4. 9. 2024.



190527	REPUBLIKA HRVATSKA		
Veterinarski fakultet u Zagrebu			
Primljeno:	04.09.2024		
Klasifikacijska oznaka	Org. jed.		
602-04/24-22/38	251-61-41:251-61-32;251-61-02;		
Urudžbeni broj	Prilozi	Vrijednost	
251-61-02-24-27	0	-	

COURSE SYLLABUS

Course name: **ZOOLOGY**
Academic year 2024 – 2025

Course leader: Associate professor Daniel Špoljarić, DVM, PhD
The substitute of course leader: Full professor Josip Kusak, DVM, PhD

Teachers:

- Full Professor Josip Kusak, DVM, PhD
- Full Professor Tomislav Gomerčić, DVM, PhD
- Associate Professor Daniel Špoljarić, DVM, PhD
- Full Professor Ksenija Vlahović, DVM, PhD
- Full Professor Maja Popović, DVM, PhD
- Ira Topličanec, DVM, PhD

First day of classes: 11. 10. 2024.

Last day of classes: 23. 1. 2025.

Activities - Zoology (1/4)								
Start Date	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
11/10/2024	11:30	13:00	t01 field - Maksimir	1E-1, 1E-2, 1E-3		1:30	Nastavnici na predmetu	a1_autobus 1
28/10/2024	8:15	9:45	p01 Introduction	1E-1, 1E-2, 1E-3		1:30	Špoljarić D.	P_fizika
29/10/2024	8:15	9:45	p02 Evolution	1E-1, 1E-2, 1E-3		1:30	Gomerčić T.	P_fizika
29/10/2024	11:45	13:15	s01 Introduction, nonliving and living nature	1E-1, 1E-2, 1E-3		1:30	Gomerčić T.	P_fizika
05/11/2024	13:45	15:15	s02 Abiotic factors	1E-1, 1E-2, 1E-3		1:30	Gomerčić T.	P_fizika
06/11/2024	8:15	9:45	p03 Cell structure	1E-1, 1E-2, 1E-3		1:30	Špoljarić D.	P_fizika
06/11/2024	15:15	16:45	s03 Biotic factors	1E-1, 1E-2, 1E-3		1:30	Gomerčić T.	P_fizika
08/11/2024	8:15	9:45	s04 Interactions, successions, biomes	1E-1, 1E-2, 1E-3		1:30	Gomerčić T.	P_farmakologija
08/11/2024	10:00	18:00	t02 field - Risnjak	1E-1, 1E-2, 1E-3		8:00	Nastavnici na predmetu	
11/11/2024	8:00	9:30	s05 Influences of humans, research	1E-1, 1E-2, 1E-3		1:30	Gomerčić T.	P_farmakologija
19/11/2024	15:15	16:45	s06 Mitosis, meiosis	1E-1, 1E-2, 1E-3		1:30	Kusak J.	P_farmakologija
20/11/2024	13:45	15:15	s07 Gametes	1E-1, 1E-2, 1E-3		1:30	Popović M.	P_fizika
21/11/2024	8:15	9:45	p04 Invertebrata	1E-1, 1E-2, 1E-3		1:30	Kusak J.	P_fizika
22/11/2024	13:45	15:15	s08 Development of sea urchins, lancelets, frog	1E-1, 1E-2, 1E-3		1:30	Kusak J.	P_fizika
26/11/2024	10:00	11:30	s09 Development of birds, reptiles	1E-1, 1E-2, 1E-3		1:30	Kusak J.	P_fizika
27/11/2024	8:15	9:45	p05 Cordata - fish, amphibians	1E-1, 1E-2, 1E-3		1:30	Kusak J.	P_fizika

Activities - Zoology (2/4)								
Start Date	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
28/11/2024	10:15	11:45	s10 Development of mammals, insects	1E-1, 1E-2, 1E-3		1:30	Kusak J.	P_farmakologija
29/11/2024	10:50	12:20	p06 Reptiles, birds	1E-1, 1E-2, 1E-3		1:30	Kusak J.	P_fizika
02/12/2024	8:00	10:15	p07 Mammalas	1E-1, 1E-2, 1E-3		2:15	Gomerčić T.	P_fizika
03/12/2024	8:15	9:45	v01 Protozoa	1E-3		1:30	Nastavnici na predmetu	V_histologija
03/12/2024	15:15	16:45	v01 Protozoa	1E-1, 1E-2		1:30	Nastavnici na predmetu	V_histologija
04/12/2024	8:00	9:30	v02 Eucaryotic cells	1E-3		1:30	Nastavnici na predmetu	V_histologija
05/12/2024	8:00	9:30	v02 Eucaryotic cells	1E-1, 1E-2		1:30	Nastavnici na predmetu	V_histologija
06/12/2024	8:45	10:45	t03 field - ZOO	1E-1, 1E-2, 1E-3		2:00	Nastavnici na predmetu	a1_autobus 1
09/12/2024	15:15	16:45	v03 Platyhelminthes	1E-1, 1E-2		1:30	Nastavnici na predmetu	V_histologija
10/12/2024	8:15	9:45	v03 Platyhelminthes	1E-3		1:30	Nastavnici na predmetu	V_histologija
10/12/2024	15:15	16:45	v04 Nematelminthes	1E-3		1:30	Nastavnici na predmetu	V_histologija
11/12/2024	15:15	16:45	v04 Nematelminthes	1E-1, 1E-2		1:30	Nastavnici na predmetu	V_histologija
12/12/2024	15:15	16:45	v05 Annelida, coelom	1E-3		1:30	Nastavnici na predmetu	V_histologija

Activities - Zoology (3/4)								
Start Date	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
13/12/2024	15:15	16:45	v05 Annelida, coelom	1E-1, 1E-2		1:30	Nastavnici na predmetu	V_histologija
16/12/2024	15:15	16:45	v06 Arthropoda	1E-1, 1E-2		1:30	Nastavnici na predmetu	V_histologija
17/12/2024	8:00	9:30	v06 Arthropoda	1E-3		1:30	Nastavnici na predmetu	V_histologija
17/12/2024	15:15	16:45	v07 Fishs	1E-3		1:30	Nastavnici na predmetu	V_histologija
18/12/2024	11:45	13:15	v07 Fishs	1E-1, 1E-2		1:30	Nastavnici na predmetu	V_histologija
19/12/2024	8:15	9:45	v08 Mammals	1E-1, 1E-2		1:30	Nastavnici na predmetu	V_histologija
20/12/2024	8:15	9:45	v08 Mammals	1E-3		1:30	Nastavnici na predmetu	V_histologija
07/01/2025	8:30	10:00	v09 Mitosis	1E-3		1:30	Nastavnici na predmetu	V_histologija
07/01/2025	12:00	13:30	v09 Mitosis	1E-1, 1E-2		1:30	Nastavnici na predmetu	V_histologija
08/01/2025	13:30	15:00	v10 Meiosis	1E-3		1:30	Nastavnici na predmetu	V_histologija
09/01/2025	13:30	15:00	v10 Meiosis	1E-1, 1E-2		1:30	Nastavnici na predmetu	V_histologija
10/01/2025	13:30	15:00	v11 Types of eggs, development of sea urchins	1E-1, 1E-2		1:30	Nastavnici na predmetu	V_histologija

STUDENT OBLIGATIONS

Lecture attendance	For attendance at maximum of 15 hours of lectures student can collect 3 to 6 points, where each hour of lecture class has a value of 0.4 points.
Seminars attendance	For attendance at maximum of 20 hours of seminars, student can collect 3 (threshold) to 6 points, where each hour of a seminar class has a value of 0.3 points
Practicals attendance	For attendance at maximum of 40 hours of practical classes, student can collect 4 (threshold) to 6 points, where each hour of practical class has a value of 0.15 points.
Active participation in seminars and practicals	During seminars and practical classes, students will be questioned at least 6 times. Every correct answer brings 1.67 points, in the case if he/she has been questioned for six times. A student can collect between 5 (threshold) to 10 points
Final exam	Final Exam – Written A 50-question test, with 15 to 25 points, and each question is 0.5 units (Bologna points). A positive mark of the written exam (60% correct answers) is a precondition for taking the oral part of the exam. A drop in the oral part of the exam requires a re-entry to the written part, unless the points scored are at least 75%, ie 38 correctly answered questions. Final Exam - Oral: Three questions for 9 to 15 points. Each question values 5 units or Bologna points.
Examination requirements	Student requirements are defined in the Regulations on the Integrated Undergraduate and Graduate Study of Veterinary Medicine. Given the above, the student must acquire a minimum number of points from all assessment elements to take the final exam. Article 41: a student can justifiably be absent from up to 50 % of the lectures; 30% of the seminars and 30% of the exercises.

GRADING AND EVALUATING STUDENT WORK

Continuous knowledge-checking (mid-terms)	Twelve mini-tests (written) with 10 questions each on the beginning of almost every practical class. If a student was not present, he/she could not collect 120 units (points). For students who missed some mini-exams, the basis for point's calculation could be 110, 100 or less. The value of each question is recalculated based on the total number of questions answered. A student can collect a total of 32 points, where a unit value of each correct answer is 0.267 (in the case of 120 questions answered), while the threshold is 20 points. The table below shows correct answers (real points) recalculated to Bologna points. Students who do not collect the minimal number of points, will have the opportunity to do this on three other occasions. Terms for correctional mini-tests will be announced on the subject LMS. The threshold is 60% of correct answers, or in the case of 50 questions, the threshold is 62.5% or 31.25 of real points.
Final exams (dates)	4.11.2024. 5.12.2024. 12.2.2025. 21.2.2025.
Form of final exam	Written and oral examination. Student qualifies for oral exam by first passing the written part of the exam.

LITERATURE

Obligatory literature	1. All lectures and seminars in the Power Point format, available on VEF LMS. 2. Đuro Huber, Tomislav Gomerčić, Josip Kusak: Fundamentals of ecology – University study book for students of veterinary medicine. Veterinary faculty Zagreb 2015. 3. Guidelines for practical classes for the subject ZOOLOGY
Optional literature	1. John H. Postlethwait, Janet L. Hopson 1989. THE NATURE OF LIFE 2. Odum, E. (1988): Fundamentals of ecology, USA 3. Pimac, R. B. (1995): A primer of conservation biology. Sinauer Associates Inc, Massachusetts, USA.

OBJECTIVES AND LEARNING OUTCOMES

Course objectives	Through the course students do acquire crucial knowledge and understanding about animal kingdom, which is per se the essence of the study of veterinary medicine. The goal of teaching this course is to acquaint the students of veterinary medicine with the basic rules of functioning of living world and its relation to the non-living environment. It enables understanding of the wide range of processes from the transport of matter and energy from the level of cell and organism to the populations of all taxonomic groups of fauna and flora, and their relations on the level of ecosystem and entire biosphere. This is the precondition for any logical understanding of other courses from morphology and physiology to pathology, therapy and prevention of disease. Additional needs for this knowledge emerge from the ever broadening of spectrum of species treated in the veterinary medicine, an either as patients, husbandry, hunting, collection, or human consumption in any form. Regulations on environmental matters (like various waste disposal) and on international trade with living organism are also getting more complex and strict.
Learning outcomes	After successful completion of course, the student will be able to: ✓ taxonomically classify every animal to the phylum level and mammals to the order level ✓ interpret basics of evolutionary processes ✓ explain the structure and role of cell parts during cell divisions ✓ compare types of reproduction, ways and processes of fertilization ✓ compare stages of embryonic development of avertebrates and various groups of vertebrates ✓ explain abiotic and biotic ecological factors and mechanisms of their interactions ✓ explain biomes and phases of community successions ✓ classify types of pollutants and basic mechanism of their interactions in ecosystems

GRADING SCHEME

<i>Points</i>	<i>Grade</i>
Up to 59	1 (F)
60-68	2 (E)
69-76	2 (D)
77-84	3 (C)
85-92	4 (B)
93-100	5 (A)

Course coordinator:

Špoljarić

Associate professor Daniel Špoljarić, DVM, PhD

Head of Department of veterinary biology

Štogać

Professor Maja Popović, DVM, PhD