

2022-2023

SPECIAL VETERINARY PATHOLOGY

UNIVERSITY OF ZAGREB
FACULTY OF VETERINARY MEDICINE
Heinzelova 55
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Division: Clinics
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Register No. of the organisational unit:
Zagreb, 24/1/2024



177772	REPUBLIKA HRVATSKA	
Veterinarski fakultet u Zagrebu		
Primljeno:	24.01.2024	
Klasifikacijska oznaka	Org. jed.	
605-03/23-04/28	251-61-32;251-61-41;	
Urudžbeni broj	Prilozi	Vrijednost
251-61-11/378-24-75	0	-

COURSE SYLLABUS

Course name: SPECIAL VETERINARY PATHOLOGY

Academic year 2022-23

Course leader: Ivan-Conrado Šoštarić-Zuckermann, PhD, DECVP, Associate professor
Deputy course leader: Andrea Gudan Kurilj, PhD, DECVP, Full professor

Teachers: Andrea Gudan Kurilj, PhD, DECVP, Full professor; Ivan-Conrado Šoštarić-Zuckermann, PhD, DECVP, Associate professor; Lidija Medven Zagradišnik, DVM, PhD; Dunja Vlahović, DVM, PhD; Iva Ciprić, DVM, Nikola Serdar, DVM;

First day of classes: 26/2/2024.

Last day of classes: 17/5/2024.

Timetable for LECTURES academic year 2023-2024

Activities - Special Veterinary Patology (1/4)

	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
26/02/2024	10:00	11:30	p01 Alimentary system 1	6E-1, 6E-2, 6E-3		1:30	Gudan K. A.	P_patologija
27/02/2024	9:15	10:45	p02 Alimentary system 2	6E-1, 6E-2, 6E-3		1:30	Gudan K. A.	P_patologija
28/02/2024	11:00	12:30	p03 Alimentary system 3	6E-1, 6E-2, 6E-3		1:30	Gudan K. A.	P_patologija
29/02/2024	8:15	11:15	v01 Necropsy 1	6E-1, 6E-2, 6E-3		3:00	Nastavnici na predmetu	S_patologija
01/03/2024	10:15	11:45	p04 Liver	6E-1, 6E-2, 6E-3		1:30	Šoštarić-Z. I.C.	P_patologija
01/03/2024	12:00	15:00	v02 Necropsy 2	6E-1, 6E-2, 6E-3		3:00	Nastavnici na predmetu	S_patologija
04/03/2024	10:00	13:00	v03 Necropsy 3	6E-1, 6E-2, 6E-3		3:00	Nastavnici na predmetu	S_patologija
05/03/2024	8:15	9:45	p05 Liver and pancreas	6E-1, 6E-2, 6E-3		1:30	Šoštarić-Z. I.C.	P_fiziologija
06/03/2024	10:00	13:00	v04 Necropsy 4	6E-1, 6E-2, 6E-3		3:00	Nastavnici na predmetu	S_patologija
06/03/2024	14:00	15:30	p06 Urinary system 1	6E-1, 6E-2, 6E-3		1:30	Gudan K. A.	P_fiziologija
07/03/2024	8:15	9:45	p07 Urinary system 2	6E-1, 6E-2, 6E-3		1:30	Gudan K. A.	P_patologija
08/03/2024	10:00	11:30	p08 Urinary system 3	6E-1, 6E-2, 6E-3		1:30	Gudan K. A.	P_fizika
11/03/2024	8:15	9:45	p09 Respiratory system 1	6E-1, 6E-2, 6E-3		1:30	Medven Z. L.	P_patologija
11/03/2024	10:00	13:00	v05 Necropsy 5	6E-1, 6E-2, 6E-3, S_patologija		3:00	Nastavnici na predmetu	S_patologija
12/03/2024	13:30	15:00	p10 Respiratory system 2	6E-1, 6E-2, 6E-3		1:30	Medven Z. L.	P_patologija
13/03/2024	8:15	9:45	p11 Respiratory system 3	6E-1, 6E-2, 6E-3		1:30	Medven Z. L.	P_fiziologija
13/03/2024	12:00	15:00	v06 Necropsy 6	6E-1, 6E-2, 6E-3		3:00	Nastavnici na predmetu	S_patologija
14/03/2024	10:00	11:30	p12 Endocrine system 1	6E-1, 6E-2, 6E-3		1:30	Šoštarić-Z. I.C.	P_patologija

Activities - Special Veterinary Patology (2/4)

	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
15/03/2024	8:15	9:45	p13 Endocrine system 2	6E-1, 6E-2, 6E-3		1:30	Šoštaric-Z. I.C.	P_patologija
15/03/2024	13:00	16:00	v07 Necropsy 7	6E-1, 6E-2, 6E-3		3:00	Nastavnici na predmetu	S_patologija
18/03/2024	11:00	12:30	p14 Skin 1	6E-1, 6E-2, 6E-3		1:30	Gudan K. A.	P_kemija
19/03/2024	10:30	12:00	p15 Skin 2	6E-1, 6E-2, 6E-3		1:30	Gudan K. A.	P_patologija
19/03/2024	12:30	14:00	v08 Necropsy 8	6E-1, 6E-2, 6E-3		1:30	Nastavnici na predmetu	S_patologija, V_histologija
19/03/2024	14:30	16:00	v09 Histopathology 1	6E-1, 6E-2, 6E-3		1:30	Nastavnici na predmetu	S_patologija, V_histologija
20/03/2024	8:00	9:30	v10 Histopathology 2	6E-1, 6E-2, 6E-3		1:30	Nastavnici na predmetu	S_patologija, V_histologija
20/03/2024	9:30	11:00	v11 Histopathology 3	6E-1, 6E-2, 6E-3		1:30	Nastavnici na predmetu	S_patologija, V_histologija
21/03/2024	12:30	13:15	p16 Skin 3	6E-1, 6E-2, 6E-3		0:45	Gudan K. A.	P_patologija
21/03/2024	13:15	14:00	p17 Digitalization in Vet Pathol	6E-1, 6E-2, 6E-3		0:45	Medven Z. L.	P_patologija
22/03/2024	10:00	11:30	p18 Nervous system 1	6E-1, 6E-2, 6E-3		1:30	Šoštaric-Z. I.C.	P_patologija
25/03/2024	11:00	12:30	p19 Nervous system 2	6E-1, 6E-2, 6E-3		1:30	Šoštaric-Z. I.C.	P_fiziologija
27/03/2024	14:00	15:30	v12 Histopathology 4	6E-1, 6E-2, 6E-3		1:30	Nastavnici na predmetu	S_patologija, V_histologija
27/03/2024	15:30	17:00	v13 Histopathology 5	6E-1, 6E-2, 6E-3		1:30	Nastavnici na predmetu	S_patologija, V_histologija
02/04/2024	7:30	9:00	p20 Nervous system 3	6E-1, 6E-2, 6E-3		1:30	Šoštaric-Z. I.C.	P_patologija
02/04/2024	13:00	14:30	v14 Histopathology 6	6E-1, 6E-2, 6E-3, P_patologija		1:30	Nastavnici na predmetu	S_patologija, V_histologija

Activities - Special Veterinary Patology (3/4)

	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
02/04/2024	14:30	16:00	v15 Histopathology 7	6E-1, 6E-2, 6E-3		1:30	Nastavnici na predmetu	S_patologija, V_histologija
04/04/2024	11:00	12:30	p21 Skeletal muscle	6E-1, 6E-2, 6E-3		1:30	Šoštaric-Z. I.C.	P_patologija
05/04/2024	10:00	11:30	p22 Bones	6E-1, 6E-2, 6E-3		1:30	Šoštaric-Z. I.C.	P_patologija
08/04/2024	12:00	13:30	p23 Female reproductive 1	6E-1, 6E-2, 6E-3		1:30	Medven Z. L.	P_patologija
09/04/2024	10:00	11:30	p24 Female reproductive 2	6E-1, 6E-2, 6E-3, P_patologija		1:30	Medven Z. L.	P_patologija
11/04/2024	12:00	13:30	p25 Male reproductive	6E-1, 6E-2, 6E-3, P_patologija		1:30	Medven Z. L.	P_amfiteatar
15/04/2024	11:30	13:00	v16 Histopathology 8	6E-1, 6E-2, 6E-3, P_patologija		1:30	Nastavnici na predmetu	S_patologija, V_histologija
15/04/2024	13:00	14:30	v17 Histopathology 9	6E-1, 6E-2, 6E-3		1:30	Nastavnici na predmetu	S_patologija, V_histologija
17/04/2024	8:15	9:45	p26 Hematopoietic system	6E-1, 6E-2, 6E-3		1:30	Šoštaric-Z. I.C.	P_patologija
17/04/2024	13:15	14:45	v18 Histopathology 10	6E-1, 6E-2, 6E-3		1:30	Nastavnici na predmetu	S_patologija, V_histologija
17/04/2024	15:00	16:30	v19 Histopathology 11	6E-1, 6E-2, 6E-3, P_patologija		1:30	Nastavnici na predmetu	S_patologija, V_histologija
18/04/2024	7:30	9:00	p27 Lymph nodes	6E-1, 6E-2, 6E-3		1:30	Šoštaric-Z. I.C.	P_patologija
19/04/2024	7:30	9:00	p28 Spleen	6E-1, 6E-2, 6E-3		1:30	Šoštaric-Z. I.C.	P_patologija
19/04/2024	12:45	14:15	v20 Histopathology 12	6E-1, 6E-2, 6E-3		1:30	Nastavnici na predmetu	S_patologija, V_histologija
19/04/2024	14:15	15:45	v21 Histopathology 13	6E-1, 6E-2, 6E-3, P_patologija		1:30	Nastavnici na predmetu	S_patologija, V_histologija

Activities - Special Veterinary Patology (4/4)

	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
24/04/2024	14:00	15:30	v22 Histopathology 14 - Repetition	6E-1, 6E-2, 6E-3		1:30	Nastavnici na predmetu	S_patologija, V_histologija
24/04/2024	15:30	17:00	v23 Histopathology 15 - Colloquium	6E-1, 6E-2, 6E-3		1:30	Nastavnici na predmetu	S_patologija, V_histologija
25/04/2024	7:30	9:00	p29 Eye pathology	6E-1, 6E-2, 6E-3		1:30	Šoštaric-Z. I.C.	P_patologija
29/04/2024	10:00	11:30	p30 Cardiovascular system 1	6E-1, 6E-2, 6E-3		1:30	Gudan K. A.	P_patologija
30/04/2024	12:00	13:30	p31 Cardiovascular system 2	6E-1, 6E-2, 6E-3		1:30	Gudan K. A.	P_patologija
13/05/2024	7:30	9:45	v24 Conversatorium 1	6E-1, 6E-2, 6E-3		2:15	Nastavnici na predmetu	P_patologija
14/05/2024	9:45	12:00	v25 Conversatorium 2	6E-1, 6E-2, 6E-3		2:15	Nastavnici na predmetu	P_patologija
15/05/2024	9:00	11:15	v26 Conversatorium 3	6E-1, 6E-2, 6E-3		2:15	Nastavnici na predmetu	V_zoohigijena
16/05/2024	9:00	11:15	v27 Conversatorium 4	6E-1, 6E-2, 6E-3		2:15	Nastavnici na predmetu	P_patologija
17/05/2024	9:00	11:15	v28 Conversatorium 5	6E-1, 6E-2, 6E-3		2:15	Nastavnici na predmetu	P_patologija
Total: 59						101:15		

STUDENT OBLIGATIONS

Lecture attendance	The total number of lectures include 60 hours. During sixth semester student must be present on at least 30 hours (50%) of lectures to get minimal 3 points (each lecture hour is calculated as 0.1 points). A student can get a maximum of 6 points for this element.
Seminars attendance	
Practicals attendance	The total number of practicals include 75 hours. During the sixth semester student must be present on at least 53 hours of practicals to get a minimum of 8 points. A student can get a maximum of 12 points for this element.
Active participation in seminars and practicals	In this element, student must achieve a minimum of 5 points, and can achieve a maximum of 10 points. Each student has the obligation to perform at least two necropsies during semester, where success is scored as follows: 0-5 points (0 points = did not perform necropsy nor wrote necropsy report; 1 point = performed necropsy but but did not wrote necropsy report ; 2 points = performed necropsy, and wrote necropsy report; 3 points = performed two necropsies, and wrote necropsy report; 4 points = performed two necropsies, and wrote necropsy report and showed very good knowledge of theory and technique. Histopathology : 0 points – student has not drawn majority of given slides; 1 point – student drawn the majority of given slides; 2 points – student drawn all given slides and poorly described slides; 3 points - student drawn all given slides and correctly described slides; 4 points - student nicely drawn all given slides and correctly described slides. Conversatorium (Case study analysis) : 0 points - student has not learned given program unit; 1 point - student has learned given program unit; 2 points - student has learned given program unit and actively participated in discussion. The range of 5 to 10 points student achieves by combining ie. adding values earned by necropsies, histopathology and konverzatorij.
Final exam	Minimal conditions for passing the first, second, third and fourth evaluation elements are all summed up and they are worth 36 points all together. In order to take the final exam a student must gain the 36 points. The final exam consists of a written and oral part. Written part of the final exam will last for 60 minutes, and consists of two parts. The first part is recognition of macroscopic pathological changes (duration: 20 minutes). In this part, 10 photographs of

	<p>pathological processes (one photo at 2 minutes intervals) will be displayed on the LCD projector. For each photo, two questions will be asked, and the student can get maximum of 0.5 point per photograph (points are awarded in range from 0.25 to 0.5). The second part of the written exam is in the essay form. Each question will have guidelines to clarify what is expected in answers. Students will briefly describe some pathological processes. This part of the exam contains of 4 questions, and each question will be scored with a maximum of 5 points. A minimum of 15 points is required to pass the written exam, while a maximum of 25 points is possible. After scoring the written part of the exam, students who received a minimum number of points (15) have the right to access the oral part of the exam, while those who have a lower number of points receive a negative grade and do not have the right to access the oral part of the exam. Additional oral questions are asked according to the same principle as the essay type of questions in the written part, and it is possible to achieve a maximum of 15 points in the oral part. The grade of the final exam is the one derived from the points that student has collected from the written and oral part of the exam. The maximum amount of points in final exam is 40.</p>
Examination requirements	<p>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 in order 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.</p>

GRADING AND EVALUATING STUDENT WORK

Continuous knowledge-checking (mid-terms)	<p>During the semester, two colloquiums will be held (1. Written colloquium from the chapter "Pathology of the skin"; 2. Practical examination in Histopathology).</p> <p>Written colloquium is from the chapter " Pathology of the skin". In this colloquium it is necessary to achieve at least 10 points; maximum possible points is 16. Colloquium consists of 32 questions; in order to achieve the minimum number of points it is required to answer 20 questions (each correct answer is awarded 0.5 points). The incorrect answers will be counted as negative points (so the total score will be reduced for the number of incorrect answers, while the unanswered questions will not be scored). The colloquium will be held at the Veterinary Pathology lecture room. It is required to apply for the colloquiums with the internal application forms that are provided in the student administration office. Dates of colloquiums and Application deadlines are:</p> <ol style="list-style-type: none"> 1. Term: 23. 4. 2024 at 7:30 (Application until 12:00 on 18.4.2024). 2. Term: 17.5.2024 at 7.30 (Application until 12:00 on 15.5.2024).
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	<p>3. Term: 19.6.2024 at 8:00 (Application until 12:00 on 17.6.2024).</p> <p>The second colloquium is a practical colloquium in Histopathology. From this colloquium it is necessary to achieve a minimum of 10 points, and maximum possible points is 16. Practical examination of the Histopathology is performed at the Veterinary Pathology lecture room by examining the knowledge from slides that were presented on histopathology practicals. Each student gets four slides and has to be able to recognize the tissue, describe the lesions and give the diagnosis. Dates of colloquiums are:</p> <ol style="list-style-type: none"> 1. Term: 24.4.2024 (last practicals – application is not required). 2. Term: 28.5.2024 at 7:30. (Application until 12:00 on 27.5.2024). 3. Term: 11.6.2024 at 8:30 (Application until 12:00 on 10.6.2024).
Final exams (dates)	20.3.2024., 29.4.2024., 28.5.2024., 26.6.2024., 4.7.2024., 9.9.2024., 23.9.2024.
Form of final exam	Written and oral exam.

LITERATURE

Obligatory literature	<ol style="list-style-type: none"> 1. J. F. Zachary (2022): Pathologic Basis of Disease, 7th edition, Elsevier, Philadelphia. 2. Notes and presentations provided by lecturers.
Optional literature	<ol style="list-style-type: none"> 1. Grabarević, Željko i Sabočanec, Ruža (2016): Osnove razudbe domaćih životinja. Medicinska naklada, Zagreb. 2. Jubb, Kennedy & Palmer, Grant Maxie M (2015): Pathology of Domestic Animals., 6th ed, Saunders Elsevier.

OBJECTIVES AND LEARNING OUTCOMES

Course objectives	<p>Pathogenesis of noninfectious, infectious and congenital diseases.</p> <p>Classification and nomenclature of diseases. Morphology of lesions characteristic for certain diseases.</p> <p>Macroscopic and microscopic recognition of diseases related to the clinical signs of the disease.</p>
Learning outcomes	<p>At the end of the course students will get knowledge in pathology of organic systems necessary for further performing of education in other clinical subjects. The final goal upon the end of the studying is to be able to recognise a pathological process, make a right diagnosis and give the proper therapy, or if the</p>

animal perishes to get the right diagnosis in a proper way (by autopsy and other laboratory studies) thus act as a preventive measure for other animals.

By the completion of the course students should be able to:

- analyze pathological changes (lesions) and classify them in order to determine specific animal diseases
- analyze microscopic slides of basic pathologic processes and most important animal diseases
- correlate macroscopic and microscopic changes together with the results of other ancillary laboratory tests
- make diagnosis and conclusion about emergence and development of disease or animal death
- write necropsy report

GRADING SCHEME

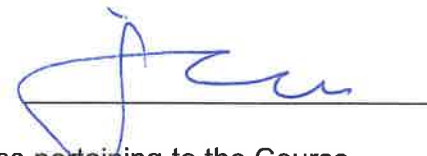
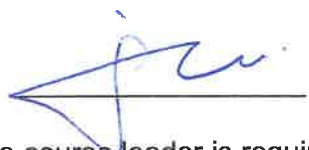
<i>Points</i>	<i>Grade</i>
Up to 59	1 (F)
60-68	2 (E)
69-76	2 (D)
77-84	3 (C)
85-92	4 (B)
93-100	5 (A)

Course leader:

Assoc. prof. Ivan-Conrado Šoštarić-Zuckermann, DECVF

Head of organizational unit:

Assoc. prof. Ivan-Conrado Šoštarić-Zuckermann, DECVF



Note: The course leader is required to submit a Course Syllabus to all teachers and associates pertaining to the Course

**GRADING AND EVALUATION OF STUDENT WORK ON COURSES WITH LECTURES,
SEMINARS and PRACTICALS**

Type of activity	Minimum number of points	Maximum number of points
Lectures attendance	3	6
Seminar attendance	4	6
Practicals attendance	4	6
Active participation in seminars and practicals	5	10
Continuous knowledge checking (mid-terms)	20	32
Final exam	24	40
TOTAL	60	100

**GRADING AND EVALUATION OF STUDENT WORK ON COURSES WITH LECTURES and
SEMINARS**

Type of activity	Minimum number of points	Maximum number of points
Lecture attendance	3	6
Practicals attendance	8	12
Active participation in practicals	5	10
Continuous knowledge checking (mid-terms)	20	32
Final exam	24	40
TOTAL	60	100

**GRADING AND EVALUATION OF STUDENT WORK ON COURSES WITH SEMINARS and
EXERCISES**

Type of activity	Minimum number of points	Maximum number of points
Seminar / practicals attendance	11	18
Active participation in seminars and practicals	5	10
Continuous knowledge checking (mid-terms)	20	32
Final exam	24	40
TOTAL	60	100