

2025-2026

Surgery, orthopaedics and ophthalmology III

UNIVERSITY OF ZAGREB
FACULTY OF VETERINARY MEDICINE
Heinzelova 55
Tel. 01/2390-390
Division: Clinical
Organizational unit: **Surgery, orthopaedics and ophthalmology**
Email: dvnuuk@vef.unizg.hr
Register no.:
File no.:
Zagreb, 5/9/2025.

		
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Veterinarski fakultet u Zagrebu		
Primljeno:	08.09.2025	
Klasifikacijska oznaka	Org. jed.	
602-04/25-22/34	251-61-41;251-61-32;	
Uredbeni broj	Priloz	Vrijednost
251-61-21-25-60	0	-

COURSE SYLLABUS

Course name: **Surgery, orthopaedics and ophthalmology III**

Academic year 2025/2026

Course leader: Full Prof. Dražen Vnuk, PhD

Deputy course leader: Assoc. prof. Nika Brkljača Bottegaro

Teachers:

Prof. Dražen Matičić, FCA, PhD; Prof. Boris Pirkić, PhD; Prof. Mario Kreszinger, PhD; Prof. Dražen Vnuk, PhD; Prof. Ozren Smolec, PhD; Assoc. Prof. Nika Brkljača Bottegaro, PhD; Assoc. Prof. Marko Pećin, PhD; Assist. Prof. Marija Lipar PhD, Petar Kostešić, PhD; Valentina Plichta, PhD; Marija Mamić, PhD; Petra Dmitrović, PhD; Niko Ivkić, DVM; Katarina Miljak DVM, Petra Ricijaš, DVM

First day of classes: 29.09.25.

Last day of classes: 09.01.26.

Activities - Surgery, orthopaedics and ophthalmology III (1/5)									
Start Dat	Start	End	Subject	Subject	Group	Note	Length	Instructor	Room
29/09/2025	8:15	9:45	Surgery, orthopaedics and ophthalmology III	p01 Diagnostics of lameness in horses	9E-1, 9E-2, 9E-3		1:30	Brkljača Bottegato N.	P_fizika
07/10/2025	11:30	13:00	Surgery, orthopaedics and ophthalmology III	p02 Hoof diseases	9E-1, 9E-2, 9E-3		1:30	Brkljača Bottegato N.	P_kemija
14/10/2025	10:00	11:30	Surgery, orthopaedics and ophthalmology III	p03 Bone diseases in horse	9E-1, 9E-2, 9E-3		1:30	Brkljača Bottegato N.	P_klinike
15/10/2025	10:00	11:30	Surgery, orthopaedics and ophthalmology III	p04 Tendon and ligament diseases in horses	9E-1, 9E-2, 9E-3		1:30	Brkljača Bottegato N.	P_klinike
16/10/2025	10:30	12:00	Surgery, orthopaedics and ophthalmology III	p05 Joint diseases in horses	9E-1, 9E-2, 9E-3		1:30	Brkljača Bottegato N.	P_klinike
20/10/2025	8:15	9:45	Surgery, orthopaedics and ophthalmology III	p06 Introduction to orthopaedics	9E-1, 9E-2, 9E-3		1:30	Pećin M.	P_klinike
22/10/2025	8:15	9:45	Surgery, orthopaedics and ophthalmology III	p07 Fracture biology and biomechanics	9E-1, 9E-2, 9E-3		1:30	Matičić D.	P_klinike
27/10/2025	8:15	9:45	Surgery, orthopaedics and ophthalmology III	p11 Neurological examination	9E-1, 9E-2, 9E-3		1:30	Pirkić B.	P_fiziologija

Activities - Surgery, orthopaedics and ophthalmology III (2/5)

Start Dat	Start	End	Subject	Subject	Group	Note	Length	Instructor	Room
28/10/2025	8:15	9:45	Surgery, orthopaedics and ophthalmology III	p09 Joint diseases I	9E-1, 9E-2, 9E-3		1:30	Kreszinger M.	P_klinike
29/10/2025	10:15	11:45	Surgery, orthopaedics and ophthalmology III	p12 Intervertebral disc diseases	9E-1, 9E-2, 9E-3		1:30	Pirkić B.	P_fizika
30/10/2025	8:15	12:45	Surgery, orthopaedics and ophthalmology III	v01 Diagnostic of lameness in horse	9E-2		4:30	Nastavnici na predmetu	V_kirurgija štala
31/10/2025	8:00	12:30	Surgery, orthopaedics and ophthalmology III	v01 Diagnostic of lameness in horse	9E-1		4:30	Nastavnici na predmetu	V_kirurgija štala
03/11/2025	8:00	12:30	Surgery, orthopaedics and ophthalmology III	v01 Diagnostic of lameness in horse	9E-3		4:30	Nastavnici na predmetu	V_kirurgija štala
04/11/2025	8:15	12:00	Surgery, orthopaedics and ophthalmology III	v02 Hoof corrections and horseshoing Midterm exam I	9E-1		3:45	Nastavnici na predmetu	V_kirurgija
07/11/2025	8:15	12:00	Surgery, orthopaedics and ophthalmology III	v02 Hoof corrections and horseshoing Midterm exam I	9E-3		3:45	Nastavnici na predmetu	V_kirurgija

Activities - Surgery, orthopaedics and ophthalmology III (3/5)									
Start Dat	Start	End	Subject	Subject	Group	Note	Length	Instructor	Room
11/11/2025	8:15	12:00	Surgery, orthopaedics and ophthalmology III	v02 Hoof corrections and horseshoing Midterm exam I	9E-2		3:45	Nastavnici na predmetu	V_kirurgija
19/11/2025	8:15	15:00	Surgery, orthopaedics and ophthalmology III	v03 Orthopaedic examination	9E-3		6:45	Nastavnici na predmetu	V_kirurgija
21/11/2025	8:15	15:00	Surgery, orthopaedics and ophthalmology III	v03 Orthopaedic examination	9E-1		6:45	Nastavnici na predmetu	V_kirurgija
24/11/2025	8:15	15:00	Surgery, orthopaedics and ophthalmology III	v03 Orthopaedic examination	9E-2		6:45	Nastavnici na predmetu	V_kirurgija
28/11/2025	8:15	9:45	Surgery, orthopaedics and ophthalmology III	p08 Treatment of bone fractures	9E-1, 9E-2, 9E-3		1:30	Matičić D.	P_klinike
01/12/2025	8:15	9:45	Surgery, orthopaedics and ophthalmology III	p10 Joint diseases II	9E-1, 9E-2, 9E-3		1:30	Kreszinger M.	P_fizika
01/12/2025	10:00	13:00	Surgery, orthopaedics and ophthalmology III	s01 Horse lameness 1	9E-1, 9E-2, 9E-3		3:00	Brkljača Bottegato N.	P_klinike
02/12/2025	8:15	15:00	Surgery, orthopaedics and ophthalmology III	v04 Fracture treatment Midterm exam II	9E-1		6:45	Nastavnici na predmetu	V_kirurgija

Activities - Surgery, orthopaedics and ophthalmology III (4/5)

Start Dat	Start	End	Subject	Subject	Group	Note	Length	Instructor	Room
05/12/2025	8:15	9:45	Surgery, orthopaedics and ophthalmology III	p13 Fractures and luxations of vertebrae	9E-1, 9E-2, 9E-3		1:30	Pirkić B.	P_klinike
08/12/2025	8:15	15:00	Surgery, orthopaedics and ophthalmology III	v04 Fracture treatment Midterm exam II	9E-3		6:45	Nastavnici na predmetu	V_kirurgija
10/12/2025	8:15	15:00	Surgery, orthopaedics and ophthalmology III	v04 Fracture treatment Midterm exam II	9E-2		6:45	Nastavnici na predmetu	V_kirurgija
11/12/2025	8:15	9:45	Surgery, orthopaedics and ophthalmology III	p14 Diagnostics of lameness in ruminants	9E-1, 9E-2, 9E-3		1:30	Smolec O.	P_klinike
17/12/2025	8:30	10:45	Surgery, orthopaedics and ophthalmology III	s02 Horse lameness 2	9E-1, 9E-2, 9E-3		2:15	Brkljača Bottegato N.	P_klinike
23/12/2025	8:30	10:45	Surgery, orthopaedics and ophthalmology III	s03 Ruminant lameness	9E-1, 9E-2, 9E-3		2:15	Smolec O.	P_klinike
23/12/2025	11:00	12:30	Surgery, orthopaedics and ophthalmology III	p15 Diseases of locomotor system in ruminants	9E-1, 9E-2, 9E-3		1:30	Smolec O.	P_klinike
07/01/2026	8:15	12:45	Surgery, orthopaedics and ophthalmology III	v05 Cow hoof diseases Midterm exam III	9E-3		4:30	Nastavnici na predmetu	V_kirurgija

Activities - Surgery, orthopaedics and ophthalmology III (9/5)									
Start Dat	Start	End	Subject	Subject	Group	Note	Length	Instructor	Room
08/01/2026	8:15	12:45	Surgery, orthopaedics and ophthalmology III	v05 Cow hoof diseases Midterm exam III	9E-1		4:30	Nastavnici na predmetu	V_kirurgija
09/01/2026	8:15	12:45	Surgery, orthopaedics and ophthalmology III	v05 Cow hoof diseases Midterm exam III	9E-2		4:30	Nastavnici na predmetu	V_kirurgija
Total: 33							108:45		

STUDENT OBLIGATIONS

Lecture attendance	During the semester student must be present on 15 hours of lectures (from the amount of 30 hours) to obtain a minimum 3 final points during the semester. Maximum obtained number of final points from this element is 6.
Seminars attendance	During semester a students will have 10 hours of seminars. Student is obligated to attend 7 hours out of 10 hours of seminar. Student can be absent on 30% of hours of seminars. The minimal number od points for seminars is 4.2 and maximal is 6. Seminars are divided in 3 programes: a) Equine orthopedic- 4 hours b) Equine orthopedic- 3 hours c) Lameness in cattle- 3 hours
Practicals attendance	During the semester a student must attend 24,5 practicals hours (out of total 35 hours) in order to gain minimally 4,2 points during the semester. Students can be absent on 30% of hours of practicals. The maximal number of gained points from this evaluation element is 6. Practicals are divided in 5 programes: 1. Equine orthopedics- 6 hours

	2. Equine orthopedics- 5 hours 3. Small animal orthopaedic examination/OR- 9 hours 4. Decision making in fracture management and neurologic examination/OR- 9 hours 5. Lameness in cattle- 6 hours
Active participation in seminars and practicals	Participating actively at the practicals students can gain 35 points max., what brings them 10 final points. Points for performing the following tasks: 25 points = keeping records in the book of a patient in an orderly manner and active participation in the work with patients in five (5) programs 10 points = seminars (student is obligated to present at least two (2) seminar essay topics to complete course) The number of points students must gain in order to earn minimal 5 final points is 17.5. Student's participation at the exercises will be checked continuously.
Examination requirements	Student requirements are defined in the Regulations on the Integrated Undergraduate and Graduate Study of Veterinary Medicine (2022). 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. Minimal conditions for passing the first, second, third, forth and fifth (lecture attendance, seminars attendance, practicals attendance, practicals and seminars activity, mid term exams) evaluation element are summed up and they are worth 37.6 points all together. Maximum points to gain from all 5 elements is 60.

GRADING AND EVALUATING STUDENT WORK

Continuous knowledge-checking (mid-terms)	During the semester there will be three (3) mid term exams organised at the time of exercises, each containing eleven (11) problems or questions. Each correctly solved problem or correctly answered question is worth one (1) point. A student must gain at total of 21 points from 3 mid term exams (minimal 7 from each mid term exam) in order to earn minimal 20 final points (21 point multiply with 0.9696). The maximal number of points a student can gain from this evaluation element is 32 final points (33 point multiply with 0.9696). A student who does not gain minimally 21 points (7 from each exam) has a right to take up to 2 makeup mid term exams (only those which failed- less than 7 points). A student who passes the makeup mid term exam with minimally 7 correct answers has a right to take the final exam. The mid term exam are:
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	a) Diagnosis of equine lameness b) Orthopedic examination of small animals c) Neurological examination
Final exams (dates)	24.11. 2025., 05.02. 2026., 19.02. 2026.
Form of final exam	Questions in the final exam will be put in a way that a student can answer in written and oral form. In the written form there will be 20 questions divided in 5 groups (20 points), 12 of which must be answered correctly in order to take the oral exam. The maximum number of points that can be gained at the oral exam is 20 points (five questions), where maximally 4 points can be gained for 1 correct answer (0-4). The minimal number of points a student must gain at the final exam is 24 (12 points minimally at written and 12 as well at oral exam). The maximal number of points on written exam together with oral exam can be 40 points. If student does not gain minimum 12 points on written exam one can not take oral exam. If student does not gain minimum 12 points in oral exam, one fails.

LITERATURE

Obligatory literature	Teaching materials - MERLIN https://moodle.srce.hr/2024-2025/ Selected chapters from: 1. Welch Fossum, T. (2018): Small Animal Surgery, 5th ed. 2. Auer, J.A., J.A. Stick, J.M. Kummerle, T. Prange (2019): Equine Surgery. 5th ed.
Optional literature	1. Ross, M.W., S.J. Dyson (2010): Diagnosis and management of lameness in the Horse. 2. Egger- Danner et al. (2014): ICAR – claw health atlas. 3. Kent Ames, N. (2013): Noordsy's Food Animal Surgery, 5th ed. 4. Brinker, Piermattei, and Flo's Handbook of Small Animal Orthopedics and Fracture Repair (all editions). 5. Johnston, S.A., K.M. Tobias (2018): Veterinary Surgery: Small Animal (2nd edition).

OBJECTIVES AND LEARNING OUTCOMES

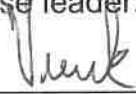
Course objectives	1. Orthopaedic examination of small animals 2. Diseases of muscles, tendons and ligaments 3. Diseases of joints 4. Treatment of bone fractures in small animals 5. Diagnostics of lameness in large animals
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	6.Diseases of muscles, tendons and tendon sheaths 7.Paralyses and paresis 8.Diseases of hooves 9.Diseases of toes 10.Types of horseshoes and correction of hooves 11.Correction of toes 12.Neurological examination 13.Fractures and luxation of vertebrae 14.Diseases of intervertebral disc 15. Degenerative diseases of vertebral column/Head trauma
Learning outcomes	Compare and apply the basic clinical methods for the orthopedic examination of small and large animals. Apply the basic principles of fracture treatment in small animals. Determine the priority of procedures in the diagnosis and treatment of a traumatized patient and the treatment of bone fractures. Distinguish between the most common diseases of muscles, tendons, bones, ligaments, and joints to make the correct diagnosis and treatment and review indications for referring patients to a referral clinic. Distinguish degenerative, traumatic and idiopathic disorders of the spine, intervertebral disc, paresis and paralysis. Determine the etiology of hoof and hoof diseases that result in irregularity and deformities in their structure and indications to refer patient to referral clinic. Distinguish appropriate shapes and models of horseshoes with different orthopedic diseases of horses. Independently judge the clinical importance of timely correction of hooves and hoofs and apply basics of hoof corrections and horseshoeing. Choose the option of using a neurological and/or orthopedic examination with the aim of establishing the correct diagnosis and treatment. Distinguish between degenerative diseases of the spine, intervertebral disc, paresis, and paralysis, and judge the indication for referring the patient to a referral clinic. Determine the condition of the patient with head trauma and suggest further diagnostics and treatment.

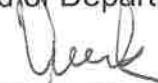
GRADING SCHEME

<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:



Head of Department/Clinic:



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