

UNIVERSITY OF ZAGREB
FACULTY OF VETERINARY MEDICINE
Heinzelova 55
Tel. 01/2390 320
Division: Clinical
Organizational unit: Reproduction and Obstetrics
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Register No of the organisational unit:
Zagreb, 22/01/2026



214066	REPUBLIKA HRVATSKA	
Veterinarski fakultet u Zagrebu		
Primljeno:	22.01.2026	
Klasifikacijska oznaka	Org. jed.	
602-04/25-22/34	251-61-41;	
Uradžbeni broj	Prilozi	Vrijednost
251-61-08/422-26-123	0	-

COURSE SYLLABUS

Course name: Obstetrics and Reproduction 1
Academic year 2025/2026

Course leader: Assoc. Prof. Branimira Špoljarić

Deputy course leader: Full prof. Juraj Grizelj

Teachers: : Full Prof. Juraj Grizelj, Full Prof. Martina Lojkić, Full Prof. Nikica Prvanović Babić, Full Prof. Marko Samardžija, Full Prof. Silvijo Vince, Assoc. Prof. Ivan Folnozić, Assoc. Prof. Iva Getz, Assoc. Prof. Branimira Špoljarić, Postdoc. Assist. Ivan Butković, Postdoc. Assist. Juraj Šavorić, Ivan Tomić, DMV

First day of classes: 25/02/2026

Last day of classes: 12/06/2026

Activities - Obstetrics and Reproduction 1 (1/5)

Start Date	Start T	End Ti	Course	Group	Note	Length	Instructor	Room
25/02/2026	12:00	13:30	p01 Hormonal Regulation of Reproductive Cycle	8E-1, 8E-2, 8E-3		1:30	Samardžija M.	P_fizika
26/02/2026	10:00	11:30	p02 Cows and Heifers 1	8E-1, 8E-2, 8E-3		1:30	Špoljarić B.	P_farmakologija
27/02/2026	11:30	13:00	p03 Cows and Heifers 2	8E-1, 8E-2, 8E-3		1:30	Špoljarić B.	P_fizika
02/03/2026	8:00	9:30	p04 Reproductive Cycle of Mares	8E-1, 8E-2, 8E-3		1:30	Grizelj J.	P_fizika
03/03/2026	9:45	12:45	V01 Female anatomy + resection	8E-1, 8E-2, 8E-3		3:00	Grizelj J.	V_porodništvo
04/03/2026	9:45	12:45	V02 Gynecologic examination	8E-1, 8E-2, 8E-3		3:00	Šavorić J.	V_porodništvo
05/03/2026	9:45	11:15	p05 Reproductive cycle of Sows	8E-1, 8E-2, 8E-3		1:30	Samardžija M.	P_fizika
09/03/2026	11:45	13:15	p06 Reproductive Cycle of Goats and Sheep	8E-1, 8E-2, 8E-3		1:30	Špoljarić B.	P_klinike
10/03/2026	11:00	14:00	V03 Gynecologic examination-cow	8E-1, 8E-2, 8E-3		3:00	Butković I.	V_porodništvo
12/03/2026	14:00	15:30	p07 Reproductive Cycle of Bitches and Cats	8E-1, 8E-2, 8E-3		1:30	Folnožić I.	P_kemija
16/03/2026	10:00	11:30	p08 Oogenesis and follicular development	8E-1, 8E-2, 8E-3		1:30	Lojkić M.	P_fizika
17/03/2026	13:15	16:15	V04 Gynecologic examination-mare	8E-1, 8E-2, 8E-3		3:00	Folnožić I.	V_porodništvo
18/03/2026	8:15	9:45	p09 Hormonal Regulation of Ovulation	8E-1, 8E-2, 8E-3		1:30	Lojkić M.	P_farmakologija
18/03/2026	13:30	16:30	V05 Gynecologic examination-small ruminants	8E-1, 8E-3		3:00	Samardžija M.	V_porodništvo

Activities - Obstetrics and Reproduction 1 (2/5)

Start Date	Start T	End Ti	Course	Group	Note	Length	Instructor	Room
19/03/2026	10:30	12:00	p10 Fertilization ana Nidation 1	8E-1, 8E-2, 8E-3		1:30	Lojkić M.	P_klinike
20/03/2026	13:15	16:15	V05 Gynecologic examination-small ruminants	8E-2		3:00	Grizelj J.	V_porodništvo
23/03/2026	11:45	13:15	p11 Fertilization and Nidation 2	8E-1, 8E-2, 8E-3		1:30	Prvanović B. N.	P_klinike
25/03/2026	9:45	12:45	V06 Estrous cycle control	8E-1, 8E-3		3:00	Grizelj J.	V_porodništvo
25/03/2026	13:00	14:30	p12 Fertilization and Nidation 3	8E-1, 8E-2, 8E-3		1:30	Prvanović B. N.	P_klinike
27/03/2026	8:15	9:45	p13 Pregnancy Diagnosis 1	8E-1, 8E-2, 8E-3		1:30	Getz I.	P_fizika
27/03/2026	13:15	16:15	V07 Gynecologic surgeries	8E-3		3:00	Grizelj J.	V_porodništvo
27/03/2026	18:00	21:45	v08 Clinical Night Shift	8E-2		3:45	Špoljarić B.	V_porodništvo
30/03/2026	10:00	13:00	V07 Gynecologic surgeries	8E-1		3:00	Grizelj J.	V_porodništvo
01/04/2026	10:00	13:00	V09 Case report- reproduction	8E-1		3:00	Getz I.	V_porodništvo
07/04/2026	9:45	12:45	V06 Estrous cycle control	8E-2		3:00	Grizelj J.	V_porodništvo
07/04/2026	13:00	16:00	V10 Male anatomy + resection	8E-1		3:00	Špoljarić B.	V_porodništvo
08/04/2026	8:15	9:45	p14 Pregnancy Diagnosis 2	8E-1, 8E-2, 8E-3		1:30	Getz I.	P_kemija
09/04/2026	10:00	11:30	p15 Pathology of Pregnancy 1	8E-1, 8E-2, 8E-3		1:30	Getz I.	P_klinike
13/04/2026	8:00	9:30	p16 Pathology of Pregnancy 2	8E-1, 8E-2, 8E-3		1:30	Vince S.	P_fizika
13/04/2026	13:15	16:15	V11 Andrologic examination and artificial vaginas	8E-1, 8E-2, 8E-3		3:00	Šavorić J.	V_porodništvo
16/04/2026	8:15	9:45	p17 Pathology of Pregnancy 3	8E-1, 8E-2, 8E-3		1:30	Vince S.	P_fizika
16/04/2026	12:00	15:00	V07 Gynecologic surgeries	8E-2		3:00	Getz I.	V_porodništvo
20/04/2026	18:00	21:45	v08 Clinical Night Shift	8E-3		3:45	Špoljarić B.	V_porodništvo

Activities - Obstetrics and Reproduction 1 (3/5)

Start Date	Start T	End Ti	Course	Group	Note	Length	Instructor	Room
23/04/2026	11:00	12:30	p18 Physiology of Labour and Delivery 1	8E-1, 8E-2, 8E-3		1:30	Prvanović B. N.	P_klinike
23/04/2026	13:15	16:15	V09 Case report- reproduction	8E-3		3:00	Getz I.	V_porodništvo
24/04/2026	9:30	12:30	V12 Spermiology 1	8E-1, 8E-2, 8E-3		3:00	Šavorić J.	V_porodništvo
24/04/2026	12:45	14:15	p19 Physiology of Labour and Delivery 2	8E-1, 8E-2, 8E-3		1:30	Prvanović B. N.	P_klinike
24/04/2026	18:00	21:45	v08 Clinical Night Shift	8E-1		3:45	Špoljarić B.	V_porodništvo
29/04/2026	11:30	13:00	p20 Spermiology 1	8E-1, 8E-2, 8E-3		1:30	Lojkić M.	P_klinike
29/04/2026	13:00	16:00	V13 Spermiology 2	8E-1, 8E-2, 8E-3		3:00	Lojkić M.	V_porodništvo
04/05/2026	10:00	11:30	p21 Spermiology 2	8E-1, 8E-2, 8E-3, P_klinike		1:30	Samardžija M.	P_klinike
04/05/2026	13:15	16:15	V09 Case report- reproduction	8E-2		3:00	Samardžija M.	V_porodništvo
06/05/2026	9:00	10:30	p22 Artificial Insemination	8E-1, 8E-2, 8E-3		1:30	Grizelj J.	P_klinike
06/05/2026	11:00	14:00	V10 Male anatomy + resection	8E-3		3:00	Butković I.	V_porodništvo
07/05/2026	10:15	13:15	V14 Spermiology 3	8E-1, 8E-2		3:00	Butković I.	V_porodništvo
08/05/2026	8:00	13:15	V15 Gyn. exam. - Bovine farm SLJEME	8E-1, 8E-2, 8E-3		5:15	Vince S.	Farma Sljeme
11/05/2026	13:15	16:15	V16 Artifical insemination	8E-1, 8E-2, 8E-3		3:00	Lojkić M.	V_porodništvo
13/05/2026	9:00	10:30	p23 Physiology and Pathology of the Puerperium 1	8E-1, 8E-2, 8E-3		1:30	Folnožić I.	P_klinike
13/05/2026	12:15	15:15	V17 Clinics- gyn. exam. companion animals	8E-1, 8E-2, 8E-3		3:00	Lojkić M.	V_porodništvo
18/05/2026	8:15	9:45	p24 Physiology and Pathology of the Puerperium 2	8E-1, 8E-2, 8E-3		1:30	Folnožić I.	P_klinike

Activities - Obstetrics and Reproduction 1 (4/5)

Start Date	Start T	End Ti	Course	Group	Note	Length	Instructor	Room
18/05/2026	10:00	13:00	V18 Clinics- gyn. exam. companion animals	8E-1, 8E-2, 8E-3		3:00	Šavorić J.	V_porodništvo
19/05/2026	8:15	9:45	p25 Physiology and Pathology of the Puerperium 3	8E-1, 8E-2, 8E-3		1:30	Vince S.	P_klinike
19/05/2026	10:00	13:00	V19 Clinics- gyn. exam. companion animals	8E-1, 8E-2, 8E-3		3:00	Folnožić I.	V_porodništvo
21/05/2026	12:15	15:15	V14 Spermiology 3	8E-3		3:00	Folnožić I.	V_porodništvo
25/05/2026	11:00	14:00	V10 Male anatomy + resection	8E-2		3:00	Folnožić I.	V_porodništvo
25/05/2026	14:30	16:00	p26 Physiology and Pathology of the Puerperium 4	8E-1, 8E-2, 8E-3		1:30	Vince S.	P_klinike
26/05/2026	8:15	9:45	p27 Physiology and Pathology of the Udder 1	8E-1, 8E-2, 8E-3		1:30	Folnožić I.	P_klinike
28/05/2026	9:00	10:30	p28 Physiology and Pathology of the Udder 2	8E-1, 8E-2, 8E-3		1:30	Špoljarić B.	P_klinike
28/05/2026	11:30	14:30	V20 Clinics- gyn. exam. cow	8E-1, 8E-2, 8E-3		3:00	Vince S.	V_porodništvo
28/05/2026	14:45	16:15	p29 Physiology and Pathology of the Udder 3	8E-1, 8E-2, 8E-3		1:30	Grizelj J.	P_klinike
29/05/2026	8:00	15:15	V21 Gyn. exam. - Bovine farm BJELOVAR	8E-1, 8E-2, 8E-3		7:15	Grizelj J.	Farma Bjelovar
01/06/2026	10:30	13:30	V22 Clinics- gyn. exam. mare	8E-1, 8E-2		3:00	Folnožić I.	V_porodništvo
01/06/2026	14:00	15:30	p30 Selected Topics	8E-1, 8E-2, 8E-3		1:30	Grizelj J.	P_klinike
03/06/2026	10:45	13:45	V22 Clinics- gyn. exam. mare	8E-3		3:00	Folnožić I.	V_porodništvo
09/06/2026	12:15	15:15	V23 Mammary gland 1	8E-1, 8E-2, 8E-3		3:00	Folnožić I.	V_porodništvo
12/06/2026	12:15	15:15	V24 Mammary gland 2	8E-1, 8E-2, 8E-3		3:00	Folnožić I.	V_porodništvo

Activities - Obstetrics and Reproduction 1 (5/5)

Start Date	Start T	End Ti	Course	Group	Note	Length	Instructor	Room
Total: 66						161:45		

Timetable for LECTURES academic year 2025/2026

STUDENT OBLIGATIONS

Lecture attendance	By attending lectures the student gains 3-6 points (60 lecture hours; each lecture hour equals a 0,1 coefficient). Students must attend at least 30 lecture hours
Seminars attendance	/
Practicals attendance	By attending practicals the student gains 8-12 points (105 exercise hours; each practicals hour equals a 0,11 coefficient) Students are obliged to attend at least 73 practicals hours
Active participation in seminars and practicals	<p>By attending lectures the student gains 3-6 points (60 lecture hours; each lecture hour equals a 0.1 coefficient). Students must attend at least 30 lecture hours. By attending practicals the student gains 8-12 points (105 exercise hours; each exercise hour equals a 0.11 coefficient). Students must attend at least 73 exercise hours.</p> <p>The activity at the practicals is evaluated with 5-10 activity points. Each point earned at activities will be multiplied by coefficient 0,1, to obtain activity points. The activity will be evaluated through the following:</p> <ol style="list-style-type: none"> 1) Participating in clinical work and the treatment of the patient (pets – dogs, cats, etc.), the student can gain a maximum of 20 points (taking a history, clinical examination of the animal, establishing a differential diagnosis, treatment options), 2) Participating in clinical work and the treatment of the patient (farm animals - cows, horses, pigs, sheep, goats); the student can gain a maximum of 20 points (taking a history, clinical examination of the animal, establishing a differential diagnosis, treatment options), 3) Evaluation of the collected semen (assessment of sperm motility, determination of sperm concentration and evaluation of sperm vitality), the student can gain a maximum of 30 points (the student independently performs the specified tests of the semen in order to create an evaluation report of the semen), 4) Examination of the mammary gland of domestic animals, the student can get a maximum of 10 points (the student takes a history and independently performs an examination of the mammary gland, including an examination of obtained milk sample - examination on a black background, mastitis test), 5) Artificial insemination of domestic animals, where the student can get a maximum of 10 points (the student will choose the domestic animal species, explain the procedure with male animals, methods of semen collection, the procedure of evaluating and preparing sperm doses, methods of synchronizing

Course Obstetrics and Reproduction 1

	<p>the sexual cycle and defining the optimal time for the insemination of females and methods of deposition of the semen),</p> <p>6) A short oral exam in order to check whether the student has prepared for the practicals; the student can gain a maximum of 10 points (the student can be assessed any time during the practicals in order to check if he/she has acquired the knowledge required to attend the practicals).</p> <p>Trough the described, the student can earn maximum of 100 points, to gain 10 activity points (100x0,1=10). Minimum is 50 earned points, for minimal 5 activity points. Principles of rounding to the nearest whole number will be applied.</p>
Final exam	<p>Students' attendance of lectures and practicals as well as their active participation will regularly be monitored over the course of the entire semester. There will also be continuous knowledge-checking (progress test). The total points earned will be presented to the examiner at the final exam. In order to take the final exam, a student must earn a minimum of 16 points by attending lectures and practicals and through activities during practicals, and at least 20 points from continuous knowledge assessment. The final exam consists of 10 oral questions and in total brings up to 40 points (minimal 24 points is approval). The total sum of points achieved from the above-mentioned elements is expressed in the final mark (1 — 5), 1 being a fail</p>
Examination requirements	<p>Student requirements are defined in the Regulations on the Integrated Undergraduate and Graduate Study of Veterinary Medicine (2024). Given the above, the student must acquire a minimum number of points from all assessment elements in order to take the final exam. Regulations On Intergraduate And Graduate Studies, 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>There will be a written progress test performed at the end of the semester consisting of 10 questions in written form. The progress test brings 32 points (each question equals 3.1 points), 20 points being the minimum required to pass. Taking the progress test during the main term is compulsory (missing the main term needs to be justified) 3 additional progress test terms will be announced for the progress test in agreement with students. All four of the terms will be held in June and July (first term: 17/06/2026). Progress test is required in order to register for the final exam. However, the progress test is not a requirement for a signature in the grade book. If the student fails the progress test 4 times, he/she needs</p>
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Obstetrics and Reproduction I

	to take the whole course over again. In case he/she doesn't take the progress test or fails it 4 times, an additional term is possible if the student representative writes an official request to the respective Vice Dean. The Course leader makes the final decision
Final exams (dates)	29/6/2026; 9/7/2026; 8/9/2026; 18/9/2026
Form of final exam	Oral exam

LITERATURE

Obligatory literature	<p>Lecture handouts and additional materials by Merlin</p> <p>Selected chapters from:</p> <p>NOAKES, D. E, T J. PARKINSON, G. C. W. ENGLAND (2018): Arthur's Veterinary Reproduction and Obstetrics, 10th Ed (Noakes, D. E., T.J. Parkinson, G. C. W. England, Eds.), W. B. Saunders Company Ltd.</p> <p>GORDON, I. R. (1997): Controlled Reproduction in Pigs. (Gordon, E., Ed.), CAB International</p> <p>SENGER, P. L. (2003): Pathways to Pregnancy and Parturition, 2nd Ed. Cadmus Professional communications, Science Press. Division, USA</p> <p>BLANCHARD, T. L ET AL, (2003): Manual of Equine Reproduction. 2nd Ed , Mosby</p> <p>BSAVA Manual of Canine and Feline Reproduction and Neonatology, 2nd Ed. 2019., (G. England, A. von Heimendahl, Eds), British Small Animal Veterinary Association. Gloucester, UK</p> <p>JOHNSTON, S. D, M. V. ROOT KUSTRITZ, P. S. OLSON (2003): Canine and Feline Theriogenology, 2nd Ed., Saunders Company Ltd, USA</p> <p>JACKSON, P. GG. (2004): Handbook of Veterinary Obstetrics, 2nd Ed. (Rodenhuis, J., Z. Youd, Eds.), Saunders W. B Company.</p> <p>BALL, P.J. H, A R PETERS (2004): Reproduction in Cattle, 3rd Ed. (Ball, P. J. H., A. R. Peters, Eds.), Blackwell Publishing Ltd, Oxford</p>
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<p>Optional literature</p>	<p>Selected chapters from: BSAVA Manual of Canine and Feline Abdominal Surgery, 2nd Ed. (2015), (Williams, J. M., J. D. Niles, Eds.), BSAVA LANDSBERG, G, W. L. HUNTHAUSEN, L. J. ACKERMAN (2012): Behavioural Problems of the Dog and Cat, 3rd Ed., Saunders Ltd MCKINNON, A. O. (2011): Equine Reproduction, 2nd Ed. (McKinnon, A. O., E. L. Squires, W. E. Vaala, D. D. Varner, Eds.), Lea and Febiger, USA SAMPER, J. C. (2009): Equine Breeding Management and Artificial Insemination, 2nd Ed., (Gower, J., S. Stringer), Saunders, USA The Merck Veterinary Manual (2010), 10th Ed., (Kahn, C. M., S. Line, Eds.), Merck & Co, Inc., USA HAFEZ, E. S. E (2013): Reproduction in Farm Animals. 7th Ed. (Hafez, E. S. E., B. Hafez, Eds.), Willey-Blackwell, USA PUGH, D. G. (2002): Sheep and Goat Medicine. 1st Ed. (Pugh, D. G., Ed.), Saunders, USA SMITH, M. C., D. M. SHERMAN (2009): Goat Medicine. 2nd Ed. Wiley-Blackwell, USA SOLAIMAN, S. G. (2010): Goat Science and Production, (Solaiman, S. G , Ed.), Wiley-Blackwell BOYD, J. S., C. PATERSON (2000): Colour Atlas of Clinical Anatomy of the Dog and Cat. 2nd Ed., Mosby Ltd. HARKNESS, J. E.. P. V. TURNER, S. VANDEWOUDE, C. L. WHELER (2010): The Biology and Medicine of Rabbits and Rodents, 5th Ed., Wiley-Blackwell BAKER, R., J. H. LUMSDEN (2000): Color Atlas of Cytology of the Dog and Cat, Mosby QUINTAS, H., LACASTA, D., FERRER, L. M. (2022): Differential diagnosis in sheep, 1st Ed., Doctor Herriot SL FERRER, L. M., ESMAEILI, H., LACASTA, D., RAMOS, J J. (2023): Atlas of sheep and goat diseases, 1st Ed., Doctor Herriot SL</p>
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OBJECTIVES AND LEARNING OUTCOMES

<p>Course objectives</p>	<p>Within the course framework. the students will get acquainted in detail with the hormonal regulation of the reproductive cycle of domestic animals, including phases, a clinical view of reproductive cycles and the artificial insemination of domestic animals Students will also be thoroughly familiarized with oogenesis.</p>
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Obstetrics and Reproduction I

	the mechanism of ovulation, fertilization, nidation and placentation as well as pregnancy, pregnancy diagnostics and pathology of pregnancy and the phases of parturition, physiology and pathology of puerperium. spermiology, and udders.
Learning outcomes	<ol style="list-style-type: none">1. to analyse the physiological function of the gonads2. to analyse the effect of various factors on ovarian function3. to relate embryonic and fetal development to methods of diagnosing pregnancy in domestic animals4. to analyse the physiology of parturition5. to explain the physiology and pathology of pregnancy and puerperium in domestic animals6. to perform ejaculate collection, semen analyses and artificial insemination of domestic animals7. to explain the clinical picture, diagnostic methods and therapy for inflammatory conditions of the mammary gland of domestic animals

GRADING SCHEME

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

Course leader



Assoc. prof. Branimira Špoljarić

Head of organizational unit:



Full prof. Tugomir Karadjole

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