

Course:

Animal Breeding and Production

UNIVERSITY OF ZAGREB
FACULTY OF VETERINARY MEDICINE
Heinzelova 55
Phone: 01/ 2390 224
Division: Animal Production and Biotechnology
Organizational unit: Animal Breeding and Livestock Production
E-mail of the course leader: akabalin@vef.hr
Register No of the organizational unit: 61-09-2024-11
Zagreb, 23/01/2024

		
177607	REPUBLIKA HRVATSKA	
Veterinarski fakultet u Zagrebu		
Primljeno:	23.01.2024	
Klasifikacijska oznaka	Org. jed.	
605-03/23-04/28	251-61-32;251-61-41;	
Uredžbeni broj	Prilozi	Vrijednost
251-61-09/67-24-69	0	-

COURSE SYLLABUS

Course name: **Animal Breeding and Production** (4th semester)

Academic year 2023/2024

Course leader: Full Professor (permanent) Anamaria Ekert Kabalin, PhD
Deputy course leader: Full Professor (permanent) Velimir Sušić, PhD

Teachers: Full Professor (permanent) Anamaria Ekert Kabalin, PhD
Full Professor (permanent) Velimir Sušić, PhD
Associate Professor Maja Maurić Maljković, PhD
Associate Professor Sven Menčik, PhD

Associate teachers: postdoctoral assistant Ivan Vlahek, PhD and teaching assistant Aneta Piplica

First day of classes: 28/02/2024

Last day of classes: 24/05/2024

Activities - Animal Breeding and Production (1/3)

	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
28/02/2024	8:15	9:45	p01 Genetic improvement of animals	4E-1, 4E-2, 4E-3, P_fizika		1:30	Sušić V.	P_fiziologija
01/03/2024	11:45	13:15	v01 Breeding methods	4E-1, 4E-2, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo mala, R_stocarstvo velika
01/03/2024	15:00	16:30	v01 Breeding methods	4E-3, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo velika
05/03/2024	11:45	13:15	p02 Selection of animals (qualitative)	4E-1, 4E-2, 4E-3, P_farmakologija		1:30	Mauric M. M.	P_fiziologija
11/03/2024	8:15	9:45	v02 Selection of animals (qualitative)	4E-1, 4E-2, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo mala, R_stocarstvo velika
12/03/2024	12:30	14:00	v02 Selection of animals (qualitative)	4E-3, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo velika
13/03/2024	12:00	13:30	p03 Selection of animals (quantitative)	4E-1, 4E-2, 4E-3, P_fizika		1:30	Mencik S.	P_fiziologija
15/03/2024	12:00	13:30	p04 Selection of animals (quantitative)	4E-1, 4E-2, 4E-3, P_fizika		1:30	Mencik S.	P_fiziologija
22/03/2024	10:30	16:30	t01 Beef production farm	4E-1, 4E-2, 4E-3		6:00	Nastavnici na predmetu	
25/03/2024	14:00	15:30	p05 Evaluation of the breeding value I	4E-1, 4E-2, 4E-3, P_fiziologija		1:30	Ekert K.	P_fiziologija
27/03/2024	13:30	15:00	p06 Estimation of breeding values	4E-1, 4E-2, 4E-3, P_farmakologija		1:30	Ekert K.	P_mikrobiologija
02/04/2024	10:00	11:30	v03 Colloquium 3 + selection	4E-1, 4E-2, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo mala, R_stocarstvo velika

Activities - Animal Breeding and Production (2/3)

	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
02/04/2024	12:00	13:30	v03 Colloquium 3 + selection	4E-3, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo velika
05/04/2024	8:00	9:30	p07 Improvement of animal populations	4E-1, 4E-2, 4E-3		1:30	Mencik S.	P_fizika
08/04/2024	8:15	9:45	v04 Selection of animals (quantitativ)	4E-3, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo velika
08/04/2024	10:00	11:30	v04 Selection of animals (quantitativ)	4E-1, 4E-2, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo mala, R_stocarstvo velika
10/04/2024	10:00	16:00	t02 Cattle diary and hose stud farm	4E-1, 4E-2, 4E-3		6:00	Nastavnici na predmetu	
12/04/2024	8:15	9:45	v05 Selection of animals (quantitativ)	4E-1, 4E-2, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo mala, R_stocarstvo velika
15/04/2024	8:15	9:45	v05 Selection of animals (quantitativ)	4E-3, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo velika
15/04/2024	10:00	11:30	v06 Breeding value of animals	4E-1, 4E-2, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo mala, R_stocarstvo velika
19/04/2024	8:15	9:45	v06 Breeding value of animals	4E-3, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo velika
22/04/2024	13:30	15:00	v07 Colloquium 4 + UV	4E-3, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo velika
23/04/2024	10:00	11:30	v07 Colloquium 4 + UV	4E-1, 4E-2, R_stocarstvo velika		1:30	Nastavnici na predmetu	R_stocarstvo mala, R_stocarstvo velika
25/04/2024	10:00	16:00	t03 Small family horse farm	4E-1, 4E-2, 4E-3		6:00	Nastavnici na predmetu	

Activities - Animal Breeding and Production (3/3)

	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
07/05/2024	15:00	16:30	s01 Breeding programs (cattle, sheep and goats)	4E-1, 4E-2, 4E-3, R_stocarstvo velika	Online	1:30	Sušić V.	R_stocarstvo velika
14/05/2024	9:30	11:00	s02 Breeding programs (horses, dogs and cats)	4E-1, 4E-2, 4E-3, R_stocarstvo velika	Online	1:30	Ekert K.	R_stocarstvo velika
17/05/2024	10:00	16:00	t04 Beef meat production farm	4E-1, 4E-2, 4E-3		6:00	Nastavnici na predmetu	
24/05/2024	15:00	16:30	s03 Breeding programs (pigs and	4E-1, 4E-2, 4E-3, R_stocarstvo velika		1:30	Mencik S.	R_stocarstvo mala, R_stocarstvo velika
Total: 28						60:00		

STUDENT OBLIGATIONS

Lecture attendance	During 4 th semester maximal number of points from this evaluation element is 2.47 (the lowest number of points that a student should gain from this element is 1.24). Every hour of lecture (from a total of 14 hours) contributes with 0.176 points. The student must attend at least 7 hours of lectures to obtain minimal number of points.																					
Seminars attendance	During 4 th semester maximal number of points from this evaluation element is 2.5 (minimal is 1.5 points). A total of 6 hours of seminars are held in 3 terms of two hours each. The student must attend at least 2 terms of the seminar to obtain minimal number of points.																					
Practicals attendance	During 4 th semester maximal number of points from this evaluation element is 2.8 (minimal is 1.8 points). Within a total of 26 hours 7 terms of practicals on the Faculty (intramural practicals of two hours each) and 4 terms of „extramural” practicals (farm visits) are included. Students are obliged to attend at least 5 terms of the practicals on the Faculty and all farm-visits (4 extramural practicals) to obtain minimal number of points (in the case of justifiable absence from the farm visit, the student must write an additional seminar).																					
Active participation in seminars and practicals	During 4 th semester maximal number of points from this evaluation element is 4 (minimal is 2.19 points). For each successfully written seminar (preparation) and for successfully completed assignment on the practical, the student receives 0.31 points. The minimum number of points a student must earn from activities in seminars and practicals is 2.19: at least 0.63 points should be obtained on seminars (at least 2 successfully written seminars) and 1.56 points should be obtained for activity on practicals (5 successfully completed tasks). The student can earn an additional 0.5 points for successful oral answer on practicals or seminar presentation. If the student successfully writes all the seminars (3) and successfully completes the tasks on practicals (7), he / she can earn a total of 3.13 points. The remaining activity points (up to a maximum of 4) may be obtained through oral answers and presentations at seminars and practicals.																					
Final exam	The final exam consists of a written and oral part. To access to the written part student must fulfill the obligations of 3 rd and 4 th semesters according to the following table: <table border="1"> <thead> <tr> <th>Type of activity</th> <th>Minimal points</th> <th>Maximal points</th> </tr> </thead> <tbody> <tr> <td>Lecture attendance</td> <td>3</td> <td>6</td> </tr> <tr> <td>Seminar attendance</td> <td>4</td> <td>6</td> </tr> <tr> <td>Practical attendance</td> <td>4</td> <td>6</td> </tr> <tr> <td>Active participation in seminars and practicals</td> <td>5</td> <td>10</td> </tr> <tr> <td>Continuous knowledge-checking</td> <td>20</td> <td>32</td> </tr> <tr> <td>Total</td> <td>36</td> <td>60</td> </tr> </tbody> </table> Number of points on the written and oral part of the final exam:	Type of activity	Minimal points	Maximal points	Lecture attendance	3	6	Seminar attendance	4	6	Practical attendance	4	6	Active participation in seminars and practicals	5	10	Continuous knowledge-checking	20	32	Total	36	60
Type of activity	Minimal points	Maximal points																				
Lecture attendance	3	6																				
Seminar attendance	4	6																				
Practical attendance	4	6																				
Active participation in seminars and practicals	5	10																				
Continuous knowledge-checking	20	32																				
Total	36	60																				

	<p><u>Final exam</u></p> <table> <thead> <tr> <th></th> <th><u>Minimal points</u></th> <th><u>Maximal points</u></th> </tr> </thead> <tbody> <tr> <td>Written part</td> <td>12</td> <td>20</td> </tr> <tr> <td>Oral part</td> <td>depends on the number of points on a written exam*</td> <td>20</td> </tr> </tbody> </table> <p>*In total, students must have at least 24 points on the written and oral part of the exam. The score for the oral exam can not be less than 5</p>		<u>Minimal points</u>	<u>Maximal points</u>	Written part	12	20	Oral part	depends on the number of points on a written exam*	20
	<u>Minimal points</u>	<u>Maximal points</u>								
Written part	12	20								
Oral part	depends on the number of points on a written exam*	20								
Examination requirements	<p>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 practicals.</p>									

GRADING AND EVALUATING STUDENT WORK

Continuous knowledge-checking (mid-terms)	<p>After two colloquia in 3rd semester, students must successfully solve colloquia 3 and 4 in 4th semester</p> <p>Colloquium 3: minimal 5 points, maximal 8 points (02/04/2024)</p> <p>Colloquium 4: minimal 5 points, maximal 8 points (22/04/2024 and 23/04/2024)</p> <p>Compensations:</p> <p>20/05/2024</p> <p>03/06/2024</p> <p>10/06/2024</p> <p>17/06/2024</p>
Final exams (dates)	<p>04/06/2024</p> <p>18/06/2024</p> <p>02/07/2024</p> <p>10/09/2024</p> <p>19/09/2023</p>
Form of final exam	Written and oral

LITERATURE

Obligatory literature	<p>Prepared materials available via on-line LMS-VEF platform.</p> <p>Radostits, O.M.: Herd Health. W.B. Saunders Company, Philadelphia, 2001. (selected chapters)</p> <p>Lasley, J.F.: Genetics of Livestock Improvement. Prentice-Hall, Inc., New Jersey, 1987. (selected chapters)</p> <p>Jiang, Ott: Reproductive genomics in domestic animals, 2010. (selected chapters)</p> <p>FAO: Marker assisted selection, 2007. (selected chapters)</p> <p>Pierce: Genetics, 2003. (selected chapters)</p> <p>Muir, Aggrey: Poultry genetics, breeding and biotechnology, 2003. (selected chapters)</p> <p>Houghton Brown, Pilliner, Davies: Horse and stable management, 2003. (selected chapters)</p> <p>Root Kustritz: The dog breeders guide to successful breeding and health management, 2006. (selected chapters)</p> <p>Vella, Shelton, McGonagle, Stanglein: Robinsons genetics for cat breeders and veterinarians, 2003. (selected chapters)</p> <p>prepared materials for lectures, seminars and practicals</p>
Optional literature	<p>Lokhorst, Groot Koerkamp: Precision livestock farming, 2009.</p> <p>Axford, Bishop, Nicholas, Owen: Breeding for disease resistance in farm animals, 2000.</p> <p>Field, Taylor: Scientific farm animal production, 2009.</p> <p>Brand, Nordhuisen, Schukken: Herd health and production management in dairy practice, 1997.</p>

OBJECTIVES AND LEARNING OUTCOMES

Course objectives	<p>The objective of the course Animal breeding and production is to teach students of veterinary medicine how to evaluate and improve genetic basis of animals. In the 4th semester special attention is focused on genotype-phenotype characteristics which have influence on quality and quantity of animal products, than to the characteristics of animal resistance to diseases and animal organism -environment interactions</p>
Learning outcomes	<p>After successfully completion of the course students will be able to:</p> <ul style="list-style-type: none"> - understand the role of genetic basis in different ways of breeding and exploiting animals - apply different methods to improve the genetic basis of animals with respect to specific breeding traits - identify various animal production systems - gather animal health and production data - analyse animal health and production data - setting the goals in cooperation with farmer - control advancement according to set goals - control advancement according to set goals

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:


Full Professor Anamaria Ekert Kabalin, PhD

Head of organizational unit:


Full Professor Anamaria Ekert Kabalin, PhD

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