Course: **Animal Breeding and Production**

UNIVERSITY OF ZAGREB
FACULTY OF VETERINARY MEDICINE
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Division: Animal Production and Biotechnology
Organizational unit: Animal Breeding and Livestock Production
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Register No of the organizational unit: 61-09-2024-115
Zagreb, 03/09/2024

COURSE SYLLABUS

Course name: **Animal Breeding and Production** (3rd semester)

Academic year 2024/2025

Course leader: Full Professor (permanent) Anamaria Ekert Kabalin, PhD
Deputy course leader: Associate Professor Sven Menčik, PhD

Teachers: Full Professor (permanent) Anamaria Ekert Kabalin, 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: 22/11/2024

Last day of classes: 22/01/2025

Activities - Animal Breeding and Production (1/3)

Start Date	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
22/11/2024	10:00	11:30	p01 Introduction to animal breeding and production	3E-1, 3E-2, 3E-3		1:30	Ekert Kabalin A.	P_mikrobiologija
25/11/2024	13:00	14:30	p02 Preventive measures and procedures	3E-1, 3E-2, 3E-3		1:30	Menčik S.	P_mikrobiologija
26/11/2024	15:15	16:45	p03 Cattle farming I	3E-1, 3E-2, 3E-3		1:30	Maurić Maljković M.	P_mikrobiologija
29/11/2024	12:30	14:00	p04 Cattle farming II Sheep/goat farming I	3E-1, 3E-2, 3E-3		1:30	Maurić Maljković M.	P_mikrobiologija
03/12/2024	12:15	13:45	p05 Sheep and goat farming II	3E-1, 3E-2, 3E-3		1:30		P_mikrobiologija
04/12/2024	8:15	9:45	v01 Traits in animal breeding I	3E-1, 3E-2		1:30	Nastavnici na predmetu	R_stočarstvo mala, R_stočarstvo velika
04/12/2024	10:00	11:30	v01 Traits in animal breeding I	3E-3		1:30	Nastavnici na predmetu	R_stočarstvo mala
06/12/2024	12:45	14:15	p06 Pig farming I	3E-1, 3E-2, 3E-3		1:30	Ekert Kabalin A.	R_stočarstvo velika
06/12/2024	14:30	16:00	v02 Traits in animal breeding II	3E-3		1:30	Nastavnici na predmetu	R_stočarstvo mala
09/12/2024	13:45	15:15	v02 Traits in animal breeding II	3E-1, 3E-2		1:30	Nastavnici na predmetu	R_stočarstvo mala, R_stočarstvo velika
11/12/2024	10:00	11:30	p07 Pig farming II, Laboratory animals	3E-1, 3E-2, 3E-3		1:30	Ekert Kabalin A.	P_mikrobiologija
11/12/2024	15:00	16:30	v03 Production of milk	3E-3		1:30	Nastavnici na predmetu	R_stočarstvo mala
12/12/2024	14:00	15:30	v03 Production of milk	3E-1, 3E-2		1:30	Nastavnici na predmetu	R_stočarstvo mala, R_stočarstvo velika
16/12/2024	8:15	9:45	p08 Use of horses	3E-1, 3E-2, 3E-3		1:30	Maurić Maljković M.	R_stočarstvo velika

Activities - Animal Breeding and Production (2/3)

Start Date	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
16/12/2024	12:00	13:30	v04 Production of beef meat	3E-3		1:30	Nastavnici na predmetu	R_stočarstvo mala
16/12/2024	13:45	15:15	v04 Production of beef meat	3E-1, 3E-2		1:30	Nastavnici na predmetu	R_stočarstvo mala, R_stočarstvo velika
19/12/2024	12:00	13:30	s01 Diary/beef cattle farm	3E-1, 3E-2, 3E-3		1:30	Maurić Maljković M.	R_stočarstvo velika
08/01/2025	8:15	9:45	s02 Sheep/goat farms	3E-1, 3E-2, 3E-3		1:30		R_stočarstvo velika
09/01/2025	9:00	10:30	p09 Poultry farming	3E-1, 3E-2, 3E-3		1:30	Menčik S.	P_fizika
10/01/2025	8:15	9:45	v05 1st Colloquium, Production of poultry meat/eggs	3E-3		1:30	Nastavnici na predmetu	R_stočarstvo mala
13/01/2025	8:15	9:45	v05 1st Colloquium, Production of poultry meat/eggs	3E-1, 3E-2		1:30	Nastavnici na predmetu	R_stočarstvo mala, R_stočarstvo velika
14/01/2025	8:15	9:45	s03 Pig production farm	3E-1, 3E-2, 3E-3		1:30	Ekert Kabalin A.	R_stočarstvo velika
14/01/2025	10:30	12:00	p10 Dogs and cats	3E-1, 3E-2, 3E-3		1:30	Ekert Kabalin A.	P_fizika
15/01/2025	13:45	15:15	v06 Training of horses	3E-3		1:30	Nastavnici na predmetu	R_stočarstvo mala
16/01/2025	8:15	9:45	v06 Training of horses	3E-1, 3E-2		1:30	Nastavnici na predmetu	R_stočarstvo mala, R_stočarstvo velika
17/01/2025	8:15	9:45	s04 Poultry farms	3E-1, 3E-2, 3E-3		1:30	Menčik S.	R_stočarstvo velika
20/01/2025	8:15	9:45	v07 Dogs training. Cage pets I.	3E-1, 3E-2		1:30	Nastavnici na predmetu	R_stočarstvo mala, R_stočarstvo velika
20/01/2025	10:00	11:30	v07 Dogs training. Cage pets I.	3E-3		1:30	Nastavnici na predmetu	R_stočarstvo mala

Activities - Animal Breeding and Production (3/3)

Start Date	Start T	End Ti	Subject	Group	Note	Length	Instructor	Room
21/01/2025	8:15	9:45	v08 2nd Colloquium, Dogs training, Cage pets II	3E-1, 3E-2		1:30	Nastavnici na predmetu	R_stočarstvo mala, R_stočarstvo velika
22/01/2025	8:00	9:30	v08 2nd Colloquium, Dogs training, Cage pets II	3E-3		1:30	Nastavnici na predmetu	R_stočarstvo mala
Total: 30						45:00		

Course: **Animal Breeding and Production**

STUDENT OBLIGATIONS

Lecture attendance	During 3rd semester maximal number of points from this evaluation element is 3.53 (the lowest number of points that a student should gain from this element is 1.76). Every hour of lecture (from a total of 20 hours) contributes with 0.176 points. The student must attend at least 10 hours of lectures to obtain minimal number of points.
Seminars attendance	During 3rd semester maximal number of points from this evaluation element is 3.5 (minimal is 2.5 points). A total of 8 hours of seminars are held in 4 terms of two hours each. The student must attend at least 3 terms of the seminar to obtain minimal number of points.
Practicals attendance	During 3rd semester maximal number of points from this evaluation element is 3.2 (minimal is 2.2 points). A total of 16 hours of practicals are held in 8 terms of two hours each. The student must attend at least 6 terms of the practicals to obtain minimal number of points.
Active participation in seminars and practicals	During 3rd semester maximal number of points from this evaluation element is 6 (minimal is 2.81 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 2.81: at least 0.94 points should be obtained on seminars (at least 3 successfully written seminars) and 1.88 points should be obtained for activity on practicals (6 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 (4) and successfully completes the tasks on practicals (8), he / she can earn a total of 3.75 points. The remaining activity points (up to a maximum of 6) may be obtained through oral answers and presentations at seminars and practicals.
Final exam	At the end of the third semester, there is no final exam. In order to attend the course during fourth semester, student must earn a minimum number of points from each type of activity in the third semester. The results of continuous knowledge checking (colloquia) are not a prerequisite for listening to the course in 4th semester. Dates of the final exam (written and oral) will be announced in the Course syllabus for 4th semester.
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 practicals.

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GRADING AND EVALUATING STUDENT WORK

Continuous knowledge-checking (mid-terms)	Continuous knowledge checking (colloquia) during 3rd semester (10-16 points): Colloquium 1: minimal 5 points, maximal 8 points (10/01/25) Colloquium 2: minimal 5 points, maximal 8 points (22/01/25)
Final exams (dates)	Final exam is after finishing 4th semester
Form of final exam	Written and oral

LITERATURE

Obligatory literature	Lasley, J.F.: Genetics of Livestock Improvement. Prentice-Hall, Inc., New Jerxey, 1987.;Jiang, Ott: Reproductive genomics in domestic animals, 2010.; FAO: Marker assisted selection, 2007.; Pierce: Genetics, 2003.; Muir, Aggrey: Poultry genetics, breeding and biotechnology, 2003.; Houghton Brown, Pilliner,Davies: Horse and stable management, 2003.; Root Kustritz: The dog breeders guide to successful breeding and health management, 2006.; Vella, Shelton, Mcgonagle, Stanglein: Robinsons genetics for cat breeders and veterinarians, 2003. selected web pages
Optional literature	Lokhorst, Groot Koerkamp: Precision livestock farming, 2009.; Axford, Bishop, Nicholas, Owen: Breeding for disease resistance in farm animals, 2000.; Field, Taylor: Scientific farm animal production, 2009.; Radostits, O.M.: Herd Health. W.B. Saunders Company. Philadelphia, 2001.; Brand, Nordhuisen, Schukken: Hered health and production management in dairy practice, 1997.

OBJECTIVES AND LEARNING OUTCOMES

Course objectives	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. Special attention is focused on genotype-phenotype characteristics that have influence on quality and quantity of animal products, than to the characteristics of animal resistance to diseases and animal organism - environment interactions. Material is divided into two parts. Students firstly acquire knowledge about different production systems and the way of using animal genetics to improve quantity and quality of production and in the same time how production influence on animal health. Then there are lessons on how to estimate genetic basis of particular traits and breeding methods how to improve this traits.

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Learning outcomes	After successful completion of the course, students will be able to differentiate the basic concepts of population genetics and genetic balance in the population, evaluate selection criteria and compare different breeding methods, analyze and compare breeding programs for the genetic improvement of animal populations asses the possibilities of using molecular genetic methods in improving the productivity and health of animals, evaluate different production systems for the most important species of domestic animals and judge the possible impact of breeding systems on the health and production of animals.

GRADING SCHEME

Points	*Grade*
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: **Animal Breeding and Production**

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 EXCERCISES

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