

# GENETIC METHODS IN ANIMAL IMPROVEMENT

1	Course Title:	GENETIC METHODS IN ANIMAL IMPROVEMENT	
2	Course Code:	VGN5011	
3	Type of Course:	Optional	
4	Level of Course:	Second Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	5.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:		
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. ÖZDEN ÇOBANOĞLU	
15	Course Lecturers:	Doç. Dr. Özden ÇOBANOĞLU Doç. Dr. Deniz DİNÇEL	
16	Contact information of the Course Coordinator:	Doç. Dr. Özden ÇOBANOĞLU  Bursa Uludağ Üniv. Zootekni ve Hayvan Besleme Bölümü / Genetik Anabilim Dalı, Görükle Kampüsü Nilüfer/BURSA  E-mail: ocobanoglu@uludag.edu.tr Tel: 0 224 294 1241	
17	Website:	<a href="http://www.veteriner.uludag.edu.tr">http://www.veteriner.uludag.edu.tr</a>	
18	Objective of the Course:	Explain the principles of Mendelian genetics and calculate predicted results. Critically discuss the importance of an understanding of genetic effects in populations. Evaluate the methods and tools available for use in the selection of breeding stock. Evaluate modern practice in the management of breeding animals. Measuring genetic diversity from molecular data. Comparing DNA marker technologies and evaluate their effects on animal breeding programs.	
19	Contribution of the Course to Professional Development:	In this course, students will gain experience in the application of classical and molecular genetic methods in livestock breeding.	
20	Learning Outcomes:		
		1	To understand the state of the art of applications of animal breeding to the genetic improvement of livestock.
		2	To impart knowledge about the latest tools & techniques of animal genetics & their uses in genetic improvement of livestock.
		3	To understand sources of variation in performance of animals, and the methods used to control or adjust for this variation.
		4	To differentiate, understand and estimate the importance of genetic parameter and basic breeding tools. To use different methods to genetic evaluation.
		5	To acquaint with recent trends in animal breeding & designing of need, based breeding strategies.
		6	To compare old and new DNA marker technologies and evaluate their effects on animal breeding programs
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21	Course Content:					
	Course Content:					
Week	Theoretical		Practice			
1	Introduction to Animal Breeding and Selection					
2	Types of Gene Action					
3	Miscellaneous Types of Inheritance					
4	Probability and Variation					
5	Selection Concepts and Selection of Quantitative Traits					
6	Methods of Identifying Genetically Superior Animals					
7	Techniques for Multiple-Trait Selection					
8	Mating Systems					
9	Biotechnology Applications for Animal Improvement					
10	DNA Marker Technologies and Their Impact on Animal Breeding Programs					
Activites			Number	Duration (hour)	Total Work Load (hour)	
Theoretical	13		Marker Assisted Selection in Animal Breeding	14	3.00	42.00
Practicals/Labs				0	0.00	0.00
Self study and preperation				14	5.00	70.00
Homeworks				2	15.00	30.00
Projects				2	10.00	20.00
Field Studies				0	0.00	0.00
Midterm exams				4	10.00	40.00
Others				0	0.00	0.00
Final Exams				1	4.00	4.00
Total Work Load						150.00
Total work load/ 30 hr				7		5.00
ECTS Credit of the Course						5.00
23	Assesment					
TERM LEARNING ACTIVITIES		NUMBE R	WEIGHT			
Midterm Exam		1	40.00			
Quiz		0	0.00			
Home work-project		2	10.00			
Final Exam		1	50.00			
Total		4	100.00			
Contribution of Term (Year) Learning Activities to Success Grade		50.00				
Contribution of Final Exam to Success Grade		50.00				

Total	100.00
Measurement and Evaluation Techniques Used in the Course	The evaluation of the course will be done with homework to be given in the form of small projects, and the exams of the course will be done in a classical way.

<b>24</b>	<b>ECTS / WORK LOAD TABLE</b>
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25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	3	4	3	5	1	3	4	0	0	0	0	0	0	0	0	0
ÖK2	5	3	4	2	3	4	2	0	0	0	0	0	0	0	0	0
ÖK3	4	2	2	3	4	1	3	0	0	0	0	0	0	0	0	0
ÖK4	2	4	2	4	2	3	3	0	0	0	0	0	0	0	0	0
ÖK5	3	2	4	1	2	3	4	0	0	0	0	0	0	0	0	0
ÖK6	5	4	2	3	5	3	2	0	0	0	0	0	0	0	0	0
LO: Learning Objectives    PQ: Program Qualifications																
Contribution Level:	1 very low		2 low		3 Medium		4 High		5 Very High							