

GENETICS

1	Course Title:	GENETICS
2	Course Code:	ZOO2402
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	4
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. CENGİZ ELMACI
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	Prof. Dr. Cengiz ELMACI Bursa Uludağ Üniversitesi, Ziraat Fakültesi Zootečni Bölümü Tel: 0(224)2941554 e-posta:elmaci@uludag.edu.tr
17	Website:	
18	Objective of the Course:	Learn principal topics and basic concepts of genetics and heredity.
19	Contribution of the Course to Professional Development:	As he learns the basic concepts of genetics and the molecular mechanism of inheritance, he will be able to follow the topics and scientific developments in the field of genetics and apply this knowledge in different fields of agriculture. Thus, he will have the competence to follow the current in his profession.
20	Learning Outcomes:	
	1	Learns basic concepts of Genetics
	2	Knows genetic material and its function in heredity
	3	Understands relationship between heredity model of different traits and breeding programmes
	4	Learns sources and mechanisms of genetic diversity
	5	Comprehends importance and role of genetics in Agricultural sciences
	6	Learns basic essential knowledge for genetic engineering and biotechnology
	7	
	8	
	9	
	10	
21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Introduction to genetics, brief history of the genetics	

2	Cells, prokaryotic and eukaryotic organisms, chromosomes		
3	Genetics events		
4	Mendelian genetics and its basic principles, solving problems		
5	Linkage, crossing-over, solving problems		
6	Sex and sex determination systems, sex linked traits, solving problems		
7	Gen interactions, solving problems		
8	Quantitative traits and genetics		
9	Population genetics, Hardy-Weinberg equilibrium, solving problem		
10	Gene concept		
11	DNA: Chemical nature of gene		
12	DNA replication, transcription, Genetic code and translation		
13	Mutation, Gene(Point) mutation		
14	Variations in chromosome structure and numbers		
22	Textbooks, References and/or Other Materials:	<p>Soysal, İ. 2025. Genlerden Genomlara Genetik (Çeviri), Akademisyen Kitabevi, (Özgün Eser: Goldberg M:L, Fischer, J.A., 2024. Genetics: From Genes to Genome, McGraw Hill LLC, NY)</p> <p>Soysal, M.İ. 2006. Genetik, Tekirdağ Ziraat Fakültesi Yayınları, Tekirdağ.</p> <p>Yüce, S., Bilgen, G., Demir, İ. 2010. Genetik, Nobel Yayın Dağıtım, Ankara</p> <p>Öner, C. 2001. Genetik, Kavramlar, Palme Yayıncılık</p> <p>Pierce, B.A., 2003. Genetics: A Conceptual Approaches., ISBN: 1-57259-160-9</p>	
23	Assesment		
TERM LEARNING ACTIVITIES		NUMBE R	WEIGHT
Midterm Exam		1	40.00
Quiz		0	0.00
Home work-project		0	0.00
Final Exam		1	60.00
Total		2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00	
Contribution of Final Exam to Success Grade		60.00	
Total		100.00	
Measurement and Evaluation Techniques Used in the Course		For assessment and evaluation, article 29 of the Bursa Uludag University Rules and Regulations governing undergraduate studies are used.	
24	ECTS / WORK LOAD TABLE		

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	3.00	42.00
Homeworks	7	2.00	14.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	14.00	14.00
Others	8	3.00	24.00
Final Exams	1	14.00	14.00
Total Work Load			150.00
Total work load/ 30 hr			5.00
ECTS Credit of the Course			5.00

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	5	0	0	0	4	3	0	4	1	0	3	0	0	0	0	0
ÖK2	5	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0
ÖK3	3	3	0	3	2	3	3	0	4	0	4	0	0	0	0	0
ÖK4	4	4	4	0	3	0	0	2	0	1	4	0	0	0	0	0
ÖK5	5	4	0	4	3	0	0	4	4	5	5	0	0	0	0	0
ÖK6	4	3	0	0	2	1	0	3	0	3	3	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			