AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Genetics								
Course Code	ZT202		Couse Level	First Cycle (Bachelor's Degree)					
ECTS Credit	3	Workload	77 *(Hours)*	Theory	2	Practice	0	Laboratory	0
Objectives of the Course	To understand basic subjects and rules for genetics and heredity								
Course Content	Definition and scope of genetics, the functions of genetic material, genetic code, replication of DNA, protein synthesis, mitosis, meiosis, Mendelian genetics, extension of mendelian genetic analysis, gene interaction and modified mendelian ratios, probability computations and statistical analysis in genetics, Linkage and crossing-over, chromosomal basis of inheritance and sex determination, gene mutations, population genetics, quantitative genetics, molecular genetics.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

Recommended or Required Reading	
1	Yüce, S., Bilgen, G., Demir, İ., 2010. Genetik. Nobel yayınları.
2	Russell, P.J., 1992. Genetics. Third Edition. Harper Collins Publishers Inc., New York, U.S.A.
3	Klug, W.S., Cummings, M.R., Spencer, C.A., 2003. Genetik – Kavramlar. Palme Yayınevi, Ankara (Çeviri editorü: Prof.Dr.Cihan Öner).

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction, definition and basic terms for genetics
2	Theoretical	Molecular structure and function of genetic material, nucleic acids, chemical composition DNA
3	Theoretical	Genetic code, Replication of DNA
4	Theoretical	The transmission of genetic material from cell to cell (mitosis) and from generation to generation (meiosis)
5	Theoretical	Protein synthesis, transcription, translation
6	Theoretical	Mendelian genetics, Monohybrid and dihybrid segregations, solving problems
7	Theoretical	Extension of Mendelian genetic analysis, gene interaction and modified Mendelian ratios
8	Theoretical	Probability computations and statistical analysis in genetics
9	Theoretical	Linkage, crossing-over, and gene mapping
10	Theoretical	Sex determinations and Sex-influenced traits
11	Theoretical	Genetic mutations (genome, chromosomal and gene mutations)
12	Theoretical	Population genetics and Hardy-Weinberg laws
13	Theoretical	Polygenic inheritance, quantitative genetics
14	Theoretical	Molecular genetics and biotechnology

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	1	2	45
Midterm Examination	1	15	1	16
Final Examination	1	15	1	16
			Total Workload (Hours)	77
			[Total Workload (Hours) / 25*] = **ECTS**	3
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	To know principal points in terms of genetic
2	To be aware of the importance of genetic for agricultural engineering
3	The importance of genetic material for the heredity
4	To understand the basic principal and rules related with breeding studies
5	To know basic knowledge and principal points in terms of molecular and biotechnological studies

Programme Outcomes *(Dairy Technology)*	
1	Having sufficient infrastructure in basic sciences and engineering subjects and ability to use the theoretical and applied info instantly in this field.
2	Determining the modern techniques, tools and information technologies required for applications related with his field and ability to use them efficiently
3	Ability for planning, projecting, and designing, following up, analyzing and finding target-driven solutions related with his field
4	Ability to have professional ethic and awareness.
5	Ability to work, decide, express opinions orally and in written individually
6	Ability to participate team studies, taking responsibility, making leadership.
7	Ability to conceive Ataturk’s principles and reforms, to communicate in Turkish and foreign language.
8	Ability to comprehend the necessity to learn for a life time, to monitor developments in science and technology and continuously renew himself.
9	Having sufficient level of information about production and quality control of milk and dairy products and also product development, increasing product quality and food security fields.
10	Ability to detect, define, solve problems related with his field and to select and apply suitable methods and modeling techniques for this purpose.
11	To be conscious about workplace applications, worker health, work security and environment subjects, to have knowledge about legal results of the engineering applications related with his subject.

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3	L4	L5
P1	4	4	4	4	4
P8	4	4	4	4	4