AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Basic Genetics								
Course Code	TB104		Couse Level	First Cycle (Bachelor's Degree)					
ECTS Credit	3	Workload	75 *(Hours)*	Theory	2	Practice	0	Laboratory	0
Objectives of the Course	To be able to comprehend 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	60

Recommended or Required Reading	
1	1. Yüce, S., Bilgen, G., Demir, İ., 2010. Genetik. Nobel yayınları.
2	2. Russell, P.J., 1992. Genetics. Third Edition. Harper Collins Publishers Inc., New York, U.S.A.
3	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	Intermediate Exam	Midterm exam
9	Theoretical	Probability computations and statistical analysis in genetics
10	Theoretical	Linkage, crossing-over, and gene mapping
11	Theoretical	Sex determinations and Sex-influenced traits
12	Theoretical	Genetic mutations (genome, chromosomal and gen mutations)
13	Theoretical	Population genetics and Hardy-Weinberg laws
14	Theoretical	Multiple alleles and quantitative genetics
15	Theoretical	Molecular genetics and biotechnology
16	Final Exam	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	1	42
Midterm Examination	1	12	1	13

Final Examination	1	19	1	20
			Total Workload (Hours)	75
			[Total Workload (Hours) / 25*] = **ECTS**	3
**25 hour workload is accepted as 1 ECTS*				

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

Programme Outcomes *(Horticulture)*	
1	Ability to examine agricultural problems under the light of basic science, mathematics, and agriculture knowledge
2	Ability to plan and apply in different agricultural systems in horticultural crop plants
3	To constitute and realize breeding programmesaccording to market demands
4	Ability to propagate any kinds of stock materials in horticultural crop plants
5	Ability ot transfer of modern technologies to production
6	Ability to have a consciousness of quality in production, storage, and evaluation in horticultural crop plants (To measure, evaluate, and manage different quality parameters)
7	To think analytically of protecting, providing transfer to future, and having responsibility to environment of all plant materials belong to horticultural crop plants area
8	Ability to search, think analytically, reach to knowledge, and obtain solution for solving of agricultural problems (Project, homework, thesis, summer training)
9	Ability to be aware of agricultural problems, to follow them, and to communicate own ideas of these subjects by verbal and written ways (Turkish, social course)
10	To be able to perform in a teamwork
11	Ability to work independently, give decision, and Express own thoughts by occupational-ethic values verbal and written ways in horticultural crop plants
12	Ability to think creatively, innovatively, and analytically, to comprehend the need of lifelong learning, be a part of a related subjects in a web of communication, and to develop by social means

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	1	2	1	1	1
P2	1	1	1	1	1
P3	2	3	1	3	4
P4	2	3	4	2	4
P5	1	2	1	1	4
P6	1	1	1	1	1
P7	1	3	4	2	3
P8	1	1	1	1	1
P9	1	1	1	1	1
P10	2	3	1	2	3
P11	1	1	1	1	1
P12	2	1	1	1	2