AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Techniques in Molecular Biology I								
Course Code	BİO543		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	8	Workload	199 *(Hours)*	Theory	2	Practice	2	Laboratory	0
Objectives of the Course	The goal of the course is to teach general molecular biology techniques								
Course Content	Genomic and plasmid DNA extraction from different organism and tissues, Nucleic acid detection and separation, mutation detection, PCR, PAGE, Agarose gel electrophoresis.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Individual Study								
Name of Lecturer(s)	Lec. Sare İlknur YAVAŞOĞLU								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading	
1	Lecturer notes
2	Sambrook and Russell,(2001) Molecular Clonning, Cold Spring Harbor Laboratory Press, ISBN-0-87969-577-3
3	Temizkan G.,Arda N.(Ed.)(2004),Moleküler Biyolojide Kullanılan Yöntemler,Nobel Kitapevleri,ISBN975-420-347-4
4	Levin B., (2004)Genes VIII, Pearson Education Inc. ISBN-0-19-508956-1

Week	Weekly Detailed Course Contents	
1	Theoretical	Structure of biomolecules
2	Theoretical	Concentration calculation and buffer solutions
3	Theoretical	General purification methods
4	Theoretical	DNA extraction from animals tissues
5	Theoretical	DNA extraction from plant tissues
6	Theoretical	DNA extraction from bacteria
7	Theoretical	Plazmid DNA extraction
8	Theoretical	Fungus DNA extraction
9	Theoretical	Methods working with proteins
10	Theoretical	Detection of nucleic acid concentration
11	Theoretical	Agarose gel electrophoresis
12	Intermediate Exam	Midterm Exam
13	Theoretical	PAGE (Poliacrylamide Gel Electrophoresis)
14	Theoretical	PCR (Polimerase Chain Reaction)
15	Theoretical	Restriction endonucleases
16	Theoretical	RNA extraction
17	Final Exam	Final Exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	2	2	60
Lecture - Practice	15	1	2	45
Assignment	2	10	2	24
Midterm Examination	1	28	2	30

Final Examination	1	38	2	40
			Total Workload (Hours)	199
			[Total Workload (Hours) / 25*] = **ECTS**	8
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	To be able to comprehend biomolecule extraction from the cell
2	To be able to comprehend Primer design and PCR
3	To be able to comprehend Restriction endonucleases
4	To be able to comprehend electrophoresis techniques
5	To be able to comprehend mutation detection methods

Programme Outcomes *(Field Crops Master)*	
1	To be able to improve and deepen the level of expertise in field crops on the basis of the departments licenses qualifications.
2	To be able to recognize the subjects related to field crops, to be able to solve these and make interpretation.
3	To be able to have the skills of acting independently, to have power to decide and to create.
4	To be able to work in teams between departments
5	To be able to give briefing about latest information of Field Crops in written, oral and visual ways.
6	To be able to take responsibility for developing the new approaches and to formulate a solution facing unforeseen complex situations of applications,
7	To be able to defend the original opinions in both Turkish and in foreign languages by using these languages and communicating effectively.
8	To be able to contribute to science by producing knowledge for the aim of improving quality, efficiency and sustainability
9	To be able to apply breeding methods in order to improve new varieties for Field Crops.
10	To be able to maintain and select the appropriate statistical methods within the framework of the study, evaluation of scientific ethics; to convert the results into a report/dissertation and to offer them by producing scientific publications.

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	3	4	3	4
P2	4	3	4	3	4
P3	4	3	4	3	4
P4	4	3	4	3	4
P5	4	3	4	3	4
P6	4	3	4	3	4
P7	4	3	4	3	4
P8	4	3	4	3	4
P9	4	3	4	3	4
P10	4	3	4	3	4