



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title	Molecular Biology Techniques								
Course Code	GMP618		Course Level		Third Cycle (Doctorate Degree)				
ECTS Credit	8	Workload	200 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	Gaining knowledge about cell disintegration, separation and purification methods. Learning of DNA and RNA isolation and analysis.								
Course Content	Nucleic acids. Methods of cell disintegration. Separation and purification methods (filtration, dialysis, precipitation, centrifugation, etc.). DNA isolation and analysis. RNA isolation and analysis. Duplication of DNA by polymerase chain reaction. Recombinant DNA technology. Methods of nucleic acid hybridization. Protein purification methods.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Case Study								
Name of Lecturer(s)	Assoc. Prof. Olcay BOYACIOĞLU								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	50
Quiz	4	10
Attending Lectures	1	10

Recommended or Required Reading	
1	MOLEKÜLER BİYOLOJİDE KULLANILAN YÖNTEMLER. Temizkan & Arda. 2012

Week	Weekly Detailed Course Contents & Teaching Methods	
1	Theoretical	Nucleic acids
2	Theoretical	Cell disintegration methods
3	Theoretical	Separation and purification methods (filtration, dialysis, precipitation, centrifugation, etc.)
4	Theoretical	DNA isolation and analysis
5	Theoretical	DNA isolation and analysis
6	Theoretical	RNA isolation and analysis
7	Theoretical	RNA isolation and analysis
8	Intermediate Exam	Midterm
9	Theoretical	Duplication of DNA by polymerase chain reaction
10	Theoretical	Recombinant DNA technology
11	Theoretical	Recombinant DNA technology
12	Theoretical	Methods of nucleic acid hybridization
13	Theoretical	Protein purification methods
14	Theoretical	Protein purification methods
15	Theoretical	Student presentation

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	3	70
Assignment	2	28	2	60
Midterm Examination	1	29	1	30
Final Examination	1	39	1	40
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes	
1	



2	
3	
4	
5	

**Programme Outcomes (Food Engineering Doctorate)**

1	Developing and investigating the details of current and advanced knowledge in the field of Food Engineering by original thought and/or research on the level of expertise based on the graduate qualification and reaching to the original definitions that bring innovation to science.
2	Gain of ability of develop strategies, policies and implementation plans in the field of food engineering and evaluate the results within the framework of quality processes.
3	Gain of ability to perceive, design, evaluate and finish an original process by using and following the knowledge of the recent developments in the engineering fields.
4	Gain of ability of making critical analysis, synthesis and evaluation of ideas and development in food engineering field
5	Having advanced knowledge of food science and its applications based on doctoral level qualifications.

**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			4	2
P3	1	2	2	3	2
P5		1	1		2

