



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Molecular Biology and Genetics							
Course Code		GMP522		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	200 ( <i>Hours</i> )	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		To provide students with theoretical knowledge about molecular biology methods and genetics.							
Course Content		DNA structure and replication, cell cycle, mitosis, meiosis, transcription, translation, mutations, DNA isolation, sequencing, PCR, electrophoresis, and protein isolation and analysis.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Case Study, Individual Study					
Name of Lecturer(s)									

### 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	Molecular Cloning, A Laboratory Manual. (Eds: Sambrook J, Russell DW). Cold Spring Harbor Laboratory Press, New York, 2001.
2	Real-Time PCR, An Essential Guide. (Eds: Edwards K, Logan J, Saunders N). Horizon Bioscience, Norfolk, UK, 2004.

Week	Weekly Detailed Course Contents	
1	Theoretical	DNA and gene structure
2	Theoretical	DNA replication
3	Theoretical	Cell cycle
4	Theoretical	Mitosis and Meiosis
5	Theoretical	Trancription and post-transcriptional modifications
6	Theoretical	Translation and Protein
7	Theoretical	Mutations
8	Intermediate Exam	Midterm Exam
9	Theoretical	Cell destruction and nucleic acid purification methods
10	Theoretical	DNA sequence analysis (Sanger, NGS, Pyro)
11	Theoretical	PCR types
12	Theoretical	Electrophoresis types
13	Theoretical	Northern, southern, Western blot
14	Final Exam	Student presentation

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	9	3	168
Quiz	4	0	0.25	1
Midterm Examination	1	14	1	15
Final Examination	1	15	1	16
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = ECTS				8

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

1	
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2	
3	
4	
5	

**Programme Outcomes (Food Engineering Master)**

1	To provide further training and research opportunities to food engineers to meet the needs of the food industry
2	To develop and deepen the current and advanced knowledge in the field of food engineering with original thought and / or research at the level of expertise, based on the qualifications of the master
3	To identify, define, formulate and solve problems in applications related to Food Engineering and gain the ability to select and apply appropriate analytical methods and modeling techniques
4	To gain the ability to evaluate the accuracy of the data obtained from food analysis
5	To educate students having research, entrepreneur 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	2	1	1	1	1
P2	3	2			
P3		5			
P4		5			
P5	4				

