AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Biochemical Teqniques								
Course Code	BİO603			Couse Level		Third Cycle (Doctorate Degree)			
ECTS Credit	8	Workload	196 *(Hours)*	Theory	2	Practice	2	Laboratory	0
Objectives of the Course	Tools to learn and develop the use of biochemical techniques.								
Course Content	Laborotuvar instruments and rules of presentation, a lot of solution preparation techniques and the test method used to practice in the field of biochemistry.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Experiment, Demonstration, Discussion, Case Study, Individual Study, Problem Solving								
Name of Lecturer(s)	Prof. Kubilay METİN								

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

Recommended or Required Reading	
1	Analytical Biochemistry David J Holme and Hazel Peck, 2002
2	Principles and Techniques of Practical Biochemistry Edited by K Wilson and J Walker, 2000

Week	Weekly Detailed Course Contents	
1	Theoretical	The solution concentrations
	Preparation Work	Presentation tools
2	Theoretical	Acids, bases, buffer solutions, the calculation of ionic strength
	Preparation Work	Preparation of a Solution
3	Theoretical	Titration curves
	Preparation Work	Buffer preperation
4	Theoretical	Spectrophotometer and spectrophotometric analysis
	Preparation Work	Acid titration
5	Theoretical	Homogenization techniques
	Preparation Work	Homogenization of tissue or cell
6	Theoretical	Centrifugation techniques
	Preparation Work	
7	Theoretical	Precipitation method
	Preparation Work	Ammonium sulfate precipitation
8	Intermediate Exam	Mid exam
9	Theoretical	Dialysis
	Preparation Work	Dialysis
10	Theoretical	Ultrafiltration
	Preparation Work	Ultrafiltration
11	Theoretical	Chromatographic techniques
	Preparation Work	Gel filtration
12	Theoretical	Chromatographic techniques
	Preparation Work	Ion-exchange chromatography
13	Theoretical	Chromatographic techniques
	Preparation Work	Hydrophobic interaction chromatography
14	Theoretical	Chromatographic techniques
	Preparation Work	Electrophoresis
15	Final Exam	Final Exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	0	2	30
Lecture - Practice	15	0	2	30
Assignment	8	8	0	64
Term Project	4	0	10	40
Reading	10	0	2	20
Quiz	4	2	0.5	10
Midterm Examination	1	0	1	1
Final Examination	1	0	1	1
			Total Workload (Hours)	196
			[Total Workload (Hours) / 25*] = **ECTS**	8
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Working in the laboratory
2	Solution preparation techniques
3	To use tools
4	Gaining the ability to experiment
5	

Programme Outcomes *(Biology Doctorate)*	
1	To have enough scientific background knowledge towards a specific study and research area
2	To have an ability to identify, evaluate and develop a solution for a problem on biological aspects
3	To be able to evaluate scientific observations and results of experiments using statistical analysis methods
4	To have basic skills in areas related to field of biological studies
5	To have the ability to develop cooperation with different disciplines with the high level of social communication required for studies
6	To have knowledge of technology and use of methods and means used in biological researches
7	To have an ethical understanding which will be a guide for their investigations and publications
8	For PhD; to have European Language Portfolio C1 general level language skill
9	To be able to present and discuss own research results in accordance with scientific discipline using technological tools in scientific research environments
10	To be able to detect and evaluate economic and social impacts of an own original research results
11	To be equipped with ability of carrying out independent study in biological field
12	To be able to publish at least one an international/national peer reviewed scientific paper and/or produce or interpret an original work related to biology in order to expand the frontiers of knowledge
13	To be able to develop new approaches or adaptations to be used in solving scientific and biological problems
14	To be able to develop new understanding and approaches in order to explain a new phenomenon or a biological event under investigation
15	To have abilities and experience to create new search area through inspiration gained from subject searched

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	5	5	5	5	
P2	5	5	5	5	
P3	5	5	5	5	
P4	5	5	5	5	2
P5	5	5	5	5	
P6	5	5	5	5	