



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Biochemical Techniques							
Course Code		KİM554		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	6	Workload	149 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		This course aims to provide the students a brief knowledge of theory and practice of biochemistry lab and research.							
Course Content		Spectroscopic, chromatographic, electrophoretic techniques. Techniques used for molecular identification. Purification techniques. Examples from research papers.							
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	20
Final Examination	1	35
Assignment	3	45

Recommended or Required Reading

1	Robyt, J.F., White, B.J. (1990) Biochemical Techniques. Waveland Press, Inc. Illinois, USA. ISBN No 0-88133-556-8
2	Unpublished lecture notes. Prof. Dr. A. Alev Karagözler.

Week	Weekly Detailed Course Contents	
2	Theoretical	Spectroscopic methods. UV-VIS spectrometry.
3	Theoretical	IR, NMR, MS.
4	Theoretical	Chromatographic techniques. Types of chromatography.
5	Theoretical	Adsorption, ion-exchange, partition, paper, thin layer chromatography.
6	Theoretical	Gel-permeation, Affinity, GC, HPLC.
7	Theoretical	Electrophoretic Techniques: Types of electrophoresis.
8	Theoretical	Use of radioisotopes in biochemical analysis.
9	Theoretical	Qualitative and quantitative methods for determining biological molecules.
10	Intermediate Exam	Midterm exam
11	Theoretical	Biological preparations.
12	Theoretical	Purification of proteins.
13	Theoretical	Enzymology.
14	Theoretical	Structural analysis of biological molecules.
15	Theoretical	Structural analysis of biological molecules.
16	Final Exam	Final exam.

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Assignment	5	0	5	25
Midterm Examination	1	48	2	50
Final Examination	1	30	2	32
Total Workload (Hours)				149
[Total Workload (Hours) / 25*] = ECTS				6

*25 hour workload is accepted as 1 ECTS



Learning Outcomes

1	to be able to find out the theory of biochemical techniques.
2	to be able to acquire knowledge on the chemical essence of biochemical techniques such as chromatography, electrophoresis, of biomolecules.
3	to be able to recognize the theory of modern techniques such as genomics, proteomics and MALDI-MS.
4	to be able to acquire knowledge on the structural analysis of biomolecules
5	to be able to acquire knowledge on the separation and purification of biomolecules.

Programme Outcomes (Chemistry Master)

1	To be able to gain proficiency in depths and analysis by statistical methods in the same or a related area depending on the undergraduate competence,.
2	To be able to use the knowledge of his/her field and the skills to solve problems and/or applications in interdisciplinary research.
3	To be able to adopt to evaluate the information and skill his/her field by critical approach.
4	To be able to evaluate the effect of important persons, case and fact on his/her field applications.
5	To be able to gain the ability to discuss write and orally present to a group of literate listener.
6	To be able to communicate orally and written in a foreign language at least at European language B2 level.
7	To be able to use computer programs related to his/her field and have skills for informatics communication.
8	To be able to be careful in protecting social, scientific and cultural ethics in collection data, application and presentation.
9	To be able to develop strategic, political and application plans in his/her field and may evaluate the outcomes in quality periods.

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	4		4	4	4
P3	3				
P5	3				
P7	4	4	3	3	4
P8	5	5		5	5
P9	4	4			

