



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Equipments Used in Laboratory and Methods							
Course Code		VBY529		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	4	Workload	105 (<i>Hours</i>)	Theory	1	Practice	2	Laboratory	0
Objectives of the Course		Biochemistry laboratory equipment and methods used to introduce and about them to make applications.							
Course Content		Biochemical methods, pre-treatment for biological materials, Spectrometry, AAS, flame photometry, fluorometry, RIA, ELISA, HPLC, thin layer chromatography., GC, GC-MS, lectin affinity chromatography, Introduction of ICP-AES and ICP-MS methods and make to applications in laboratories.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Individual Study					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Final Examination	1	100

Recommended or Required Reading

1	Karagül H., Altıntaş A., Fidancı U.R., Sel T.(2000) Klinik Biyokimya. Medisan Yayınevi ANKARA
2	Kaplan L.A, Pesce A.J, KAZmierczak S.C. Clinical chemistry. Mosby. U.S.A.

Week	Weekly Detailed Course Contents	
1	Theoretical	Biochemical classification of methods
	Practice	Rules need to be aware of when using devices
2	Theoretical	Süzme, santrifüj, diyaliz uygulamaları
	Practice	Filtration, centrifugation, dialysis applications
3	Theoretical	Spectrophotometry
	Practice	Adsorption, and microdiffusion applications
4	Theoretical	Atomic absorption Spectrophotometry (AAS)
	Practice	Enzymatic analysis in spectrophotometer
5	Theoretical	Flame photometry
	Practice	Colorimetric analysis in spectrophotometer
6	Theoretical	Fluorometry
	Practice	Video display for AAS
7	Practice	Video display for RIA
8	Intermediate Exam	Midterm exam
9	Theoretical	ELISA
	Practice	Hormones analysis with ELISA
10	Practice	Video display for HPLC
11	Theoretical	Thin-layer chromatography
	Practice	Thin-layer chromatography applications
12	Theoretical	Gas chromatography (GC)
	Practice	Evaluation of chromatographic methods
13	Theoretical	Gas chromatography (GC)- mass spectrometry (GC-MS)
	Practice	Introduction of GC-MS
14	Theoretical	Lectin affinity chromatography
	Practice	Lectin affinity chromatography applications
15	Theoretical	ICP-AES and ICP-MS
	Practice	Mineral analysis of ICP
16	Final Exam	Final exam



Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	1	1	30
Lecture - Practice	15	2	2	60
Quiz	1	1	0.5	1.5
Midterm Examination	1	7	1	8
Final Examination	1	5	1	6
Total Workload (Hours)				105
[Total Workload (Hours) / 25*] = ECTS				4

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to comprehend and apply the preparatory pre-processing for the biological materials.
2	To be able to recognize the devices used in the laboratory of Biochemistry
3	Have knowledge about chromatographic systems
4	To learn about the working principles of the devices and to learn the points to be considered in practice
5	To be able to evaluate the advantages and disadvantages of different devices and methods

Programme Outcomes (Biochemistry (Veterinary Medicine) Master)

1	To be able to tell and describe the interdisciplinary interaction with the associated fields.
2	To be able to express original ideas using his/her higher education knowledge theoretically and practically information and to be able to create original definitions, products, methods improving and questioning these ideas.
3	To be able to manage a free research according to scientific and methodological methods and be able to hypothetically and practically about his/her own field.
4	To be able to compose and interpret the information from different disciplines, and create solution suggestions and scientific information which can contribute to the solution process.
5	To be able to involve in professional organizations and institutions related with the educational background.
6	To be able to take responsibility for individual and group work, and do the assignments in line with the skills.
7	To be able to communicate with the professionals out of the field when it is necessary, and contribute to the solution as a team member.
8	To be able to tell about the production and publishing methods of scientific information.
9	To be able to design the source and the type of information that is needed related with the field and chooses the activities that s/he wants to participate, by using his/her critical thinking abilities that is developed in the education.
10	To be able to use technological devices both for professional and social purposes.
11	To be able to compose and interpret any kind of data related with the field (field observations, produced scientific information etc.) and analyzes and interprets the results according to the aims of the research.
12	To be able to define the environmental health rules and apply them for prevention.
13	To be able to apply the knowledge gained in professional level with the awareness of the needs of the region and the country, and develop a defense capability.
14	To be able to conceptualize the phenomena and the events related with the field; study scientific methods and techniques, interpret results; analyze and hypothesize methods in accordance with the results and design solution or treatment alternatives addressing the problems.
15	To be able to interpret the updates of information in the field by using all kinds of sources (scientific information, legislations etc.), and use when needed.

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P2	5				
P3	5				
P4	5	5			
P7		5			
P8	5				
P10		5			
P11	5				
P14			4	4	4

