



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Biophysical Chemistry							
Course Code		VBY523		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	4	Workload	100 (<i>Hours</i>)	Theory	2	Practice	0	Laboratory	0
Objectives of the Course		To give basic and important information on biophysical chemistry							
Course Content		Metabolism and cell, structure and properties of water, an important biophysical events, acidity, alkalinity, titrated and buffer solutions, biological buffers, acidosis, alkalosis, electrolite balance, atomic structure, isotopes and radioactivity							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Individual Study, Problem Solving					
Name of Lecturer(s)		Prof. Pınar Alkım ULUTAŞ, Prof. Serap ÜNÜBOL AYPAK							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

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	The principle of organization of living organisms, the metabolic characteristics of living organisms, the central metabolism of the cell
2	Theoretical	Physical and chemical properties of water, the biological functions of the water, functionel distribution of water
3	Theoretical	Water Exchange, osmotic pressure, colloid osmotic pressure, hydrostatic pressure
4	Theoretical	Kidneys and water balance, degradation of water balance
5	Theoretical	İmportant biophysical events:1: Diffusion, ozmosis, osmotic pressure, dialysis, decrease the freezing point, surface tension.
6	Theoretical	İmportant biophysical events:2: Adsorption, colloidal state, protective colloids, osmotic regulation
7	Theoretical	Acids, bases and titrated solutions
8	Intermediate Exam	Midterm exam
9	Theoretical	Examples of the preparation of the titrated solution
10	Theoretical	Buffer solutions
11	Theoretical	Biological buffers
12	Theoretical	Acidosis and alkalozis
13	Theoretical	Electrolyte balance
14	Theoretical	Atomic structure
15	Theoretical	İzotopes and radioactivity
16	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	2	2	60
Assignment	2	2	1	6
Reading	10	1	0	10
Quiz	2	4	1	10
Midterm Examination	1	4	1	5



Final Examination	1	8	1	9
Total Workload (Hours)				100
[Total Workload (Hours) / 25*] = ECTS				4
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	To be able to comprehend basic information about the cell and metabolism
2	To be able to comprehend the mechanism for the provision of essential importance to the organism's water balance
3	To be able to comprehend knowledge about the Important biophysical events.
4	To be able to comprehend acidity, alkalinity, and titrated buffer solutions
5	To be able to explain acidosis, alkalosis and electrolyte balance
6	To be able to comprehend The structure of the atom, isotopes and radioactivity

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 creat original definations,products,methods improving and questioning these ideas.
3	To be able to manage a free research according to scientific and metodological 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 involves 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	L6
P2	5	5	5	5	5	5
P3	5	5	5	5	5	5
P4	5	5	5	5	5	5
P8	5	5	5	5	5	5
P11	5	5	5	5	5	5

