



AYDIN ADNAN MENDERES UNIVERSITY
FACULTY OF VETERINARY MEDICINE
VETERINARY MEDICINE
COURSE INFORMATION FORM

Course Title		Biochemistry I							
Course Code		VET201		Course Level		First Cycle (Bachelor's Degree)			
ECTS Credit	3	Workload	75 (Hours)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		To give fundamental information about biophysical chemistry that provides a basis on biochemistry topics. Clasification of chemical structure and features of carbonhydrates, lipids and proteins. Basic topics about nucleic acids, enyzmes and coenyzmes							
Course Content		Biophysical Chemistry, carbohydrates, lipids, proteins, hormones, nucleic acids, enzymes							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Demonstration, Discussion					
Name of Lecturer(s)		Assoc. Prof. Serap ÜNÜBOL AYPAK, Prof. Ayşegül BİLDİK, Prof. Funda KIRAL, Prof. Pınar Alkım ULUTAŞ							

Prerequisites & Co-requisites

ECTS Requisite	10
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Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	28
Final Examination	1	48
Quiz	1	6
Assignment	1	6
Laboratory	1	12

Recommended or Required Reading

1	Kaya, N. (1993) Biyokimya, Atatürk Üniversitesi, Erzurum
2	Ersoy, E., Bayşu, N. (1986) Biyokimya, Ankara Üniversitesi Veteriner Fakültesi, Ankara.
3	Murray, R.K. (1993) Harper's Biochemistry, Appleton and Lange, Norwalk
4	Sittman, D. (2000) Biyokimya, çev. Güner G., Nobel, İstanbul
5	Onat, T., Emerk, K. (1997) Biyokimya, Saray, İzmir...

Week	Weekly Detailed Course Contents	
1	Theoretical	Chemical structure of living organism, structure of atom, functional groups, properties of solutions, real solutions, osmotic and oncotic pressures, diffusion, convection, acids and bases
	Practice	Demonstration of laboratory materials
2	Theoretical	Chemical bonds, physical and chemical properties of water, biological buffers, amphipatic structures
	Practice	Solutions, Acid-Base titration
3	Theoretical	Definition of carbohydrates, classification of carbohydrates, stereoisomerism, D- and L forms of monosaccharides, α and β - forms of monosaccharides, mutarotation
	Practice	Moore, Fehling, Benedict Experiments
4	Theoretical	Glycosidic bonds, disaccharides, sugar alcohols, sugar acids, oligosaccharides, polysaccharides, structure of mucopolysaccharides, structure of oligosaccharides determining blood groups
	Practice	Molich, Seliwanoff, Anilin Experiments
5	Theoretical	Lipids, description, functions, classifications, fatty acids, chemical features, essential fatty acids
	Practice	Osazone
6	Theoretical	Fosfolipids, sphingolipids, steroids, cholesterol, bile acids, keton bodies, terpenes, lipoproteins
	Practice	Sakkarose's hydrolisis
7	Theoretical	Enzyme, General Characteristics, Active Center, activation energy, enzyme classification, enzyme kinetics
	Practice	Starch's hydrolisis



8	Theoretical	Factors effecting enzyme activity, proenzyme, isoenzyme, coenzymes, sample selection for enzymatic analyses, using enzymology in medicine and industry
	Practice	Akrolein, Emulsion formation, saturation by, elimination of milk lipid
9	Theoretical	Aminoacids, classification, chemical principals, amino group's reactions, carboksil group's reactions, nonstandart amino acids
	Practice	Ester formation, Salkowski experiment
10	Theoretical	Peptids, definition, classification, functions, structure of proteins, denaturation
	Practice	Bile's experiments
11	Practice	Enzyme experiments
12	Theoretical	Structure of DNA, DNA forms, replication, replication's enzymes, repair of DNA, removed of DNA
	Practice	Biuret, Ksantoprotein, Ninhydrin
13	Theoretical	Description and classification of hormones, their chemical structure of principals, their biochemical important, interaction of hormon and reseptor,
	Practice	Demonstration of Aminoacid's tiol
14	Theoretical	the effect mechanisms of hormones , hypothalamus and pituitary hormones, thyroid's hormones
	Practice	Van Slayke, precipitation's experiments
15	Theoretical	Adrenal gland's hormones, gonad's hormones, pancreas and gaestrintestinal system's hormones
	Practice	Nucleiacid's experiments

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	0	2	30
Lecture - Practice	15	0	2	30
Assignment	2	0.5	0.5	2
Quiz	2	0.5	0.5	2
Midterm Examination	1	4	1	5
Final Examination	1	5	1	6
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = ECTS				3

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to know about chemical stucture of organism
2	To be able to know the structure of biomolecules that occurs chemical reaction in living cells and their functions
3	To be able to know enzymes and coenzymes that catalyze chemical reactions in the organism to the structure and function
4	To be able to konow the mechanism of homon action, chemical structure and their functions
5	To be able to contribute to theoroical information by doing some practise about defining chemical structure and features.
6	To be able to know the structure of nucleic acids, synthesis and functions

Programme Outcomes (Veterinary Medicine)

1	The student knows anatomy, structure/function of organs and tissues as well as physiological mechanisms of especially farm animals.
2	The student successfully executes the clinical applications on the basis of theoretical and applied knowledge.
3	The student diagnoses diseases using various examination methods.
4	The student can perform differential diagnosis by evaluating clinical findings in the light of laboratory findings.
5	The student is able to treat microbial, viral, parasitic and metabolic diseases successfully.
6	The student is able to perform basic surgical operations in animals.
7	The student is able to intervene in any type of parturition.
8	The student knows and executes basic principles of artificial insemination.
9	If the need arises, the student is able to perform necropsy and pathological evaluation for the aim of diagnosis and differential diagnosis.
10	The student knows and executes principles of preventive medicine.
11	The student applies needed applications on veterinary public health and food safety issues
12	The student recognizes different races of within a species on the basis of morphology and physiology
13	The student knows management practices concerning farm animals and is capable of managing of a farm
14	The student prepares animal nutrition rations for farm animals.



15	The student organizes feeding and nutrition programs in animal farms.
16	The student knows and executes the code of veterinary practice
17	The student knows and applies current legislative rules on animal welfare/rights
18	The student takes into account all scientific as well as professional ethic rules in executing veterinary practice
19	The student involves in all fields and practices concerning veterinary medicine

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
P1	5	4	3	3	3	3
P4	4	4	3	4	4	4
P12	5	5	5	5	5	5
P19	4	4	4	4	4	4

