

### AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Biochemistry	of Carbohydra	tes						
Course Code		VBY501		Couse Level		Second Cycle (Master's Degree)				
ECTS Credit	5	Workload	125 <i>(Hours)</i>	Theory	,	2	Practice 0		Laboratory	0
Objectives of	the Course	giving basic in	formation abo	out bioch	nemis	stry of carbo	ohydrates			
Course Content		Classification of carbohydrates, stereoisomerism, mutarotasyon, formulas of monosaccarits configuration, carbonhydrate derivatives, disaccarides, polisacarides, substances of blood groups, glucoseaminoglicans, synthesis of carbonhydrates, degradation of carbonhydrates								
Work Placement N		N/A								
Planned Learning Activities and Teaching Methods		Explan	ation	(Presentat	tion), Discussion	on				
Name of Lecturer(s)		Prof. Ayşegül BİLDİK, Prof. Funda KIRAL								

# Assessment Methods and Criteria

Midterm Examination130Final Examination170	Method	Quantity	Percentage (%)	
Final Examination 1 70	Midterm Examination	1	30	
	Final Examination	1	70	

## Recommended or Required Reading

1	Kaya, N. (1993) Biyokimya, Atatürk Üniversitesi, Erzurum.
2	Murray, R.K. (1993) Harper's Biochemistry, Appleton and Lange, Norwalk
3	Onat, T., Emerk, K. (1997) Biyokimya, Saray, İzmir.
4	Sittman, D. (2000) Biyokimya, çev. Güner G., Nobel, İstanbul.
5	Nihat BAYŞU, Nalan Bayşu SÖZBİLİR.(2008) Biyokimya Güneş Tıp kitabevleri, 2008

Week	Weekly Detailed Cou	rse Contents
1	Theoretical	Overview of carbohydrates (definition, significance, structure and classification)
2	Theoretical	Definition and classification of monosaccharide, open and closed formulas, the configuration formulas, ring formulas)
3	Theoretical	Optical isomerism at monosaccharides, Monosaccharide's reduction, features of their OH groups
4	Theoretical	Biologically important sugar derivatives
5	Theoretical	Description, classification, formulas of disaccharides and their properties.
6	Theoretical	definition, classification, types, characteristics of polysaccharides and their importance.
7	Theoretical	Digestion and absorption of carbohydrates, blood sugar, hormonal regulation of blood sugar
8	Theoretical	Mechanisms of hepatic providing glucose into the bloodstream: glikoneogenezis Glikogenolizis, conversion of some monosaccharide to glucose.
9	Theoretical	Midterm exam
10	Theoretical	Hepatic Mechanisms that reduce the blood glucose: Glycogenesis, conversion of glucose into fatty acids, amino acids and other carbohydrates
11	Theoretical	Oxidation of glucose for energy.
12	Theoretical	The pentose phosphate pathway
13	Theoretical	Uronic acid gateway, metabolism of some hexoses
14	Theoretical	Citric acid cycle

#### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	2	70
Reading	1	15	1	16
Quiz	1	4	0	4
Midterm Examination	1	14	1	15



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Final Examination	1		19	1	20
Total Workload (Hours) 125					125
			[Total Workload (	Hours) / 25*] = <b>ECTS</b>	5
*25 hour workload is accepted as 1 ECTS					

#### Loarning Outcomos

Learn	ing Outcomes
1	To be able to respond these questions: What is a Carbohydrate? What is its importance in organism?
2	To be able to explain the structure and classification of carbohydrates
3	To be able to comprehend knowledge about monosaccharides, disaccharide, polysaccharides
4	To be able to comprehend how the digestion and absorption of carbohydrates occur.
5	To be able to explain glycolysis, gluconeogenesis, pentose phosphate pathway, glikojenezand glycogenolysis, and metabolism of important hexoses and of uric acid patway and citric acid cycle
6	To be able to comprehend the structure and function of glycoproteins and glycolipids.

## Programme Outcomes (Biochemistry (Veterinary Medicine) Master)

1To be able to tell and describe the interdisciplinary interaction with the associated fields.2To be able to express original ideas useing his/her higher education knowledge theoretically and practically information and to be able to creat original definations, products, methods improving and questioning these ideas.3To be able to manage a free research according to scientifical and metodological methods and be able to hypothetically and practically about his/her own field.4To 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.5To be able to involves in professional organizations and institutions related with the educational background.6To be able to take responsibility for individual and group work, and do the assignments in line with the skills.7To be able to communicate with the professionals out of the field when it is necessary, and contribute to the solution as a team member.8To be able to design the source and the type of information that is needed related with the field and chooses the activities that s/her wants to participate, by using his/her critical thinking abilities that is developed in the education.10To 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.11To be able to define the environmental health rules and apply them for prevention.12To be able to define the environmental health rules and apply them for prevention.13To be able to aches capability.14<	Flogi	
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## 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	3	3	3	3	3	3
P4				3	3	3
P9				3	3	
P14	3	3	3	3	3	3

