

THE CARBOHYDRATES AND CARBOHYDRATE METABOLISMS

1	Course Title:	THE CARBOHYDRATES AND CARBOHYDRATE METABOLISMS	
2	Course Code:	VBK6001	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	4.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:		
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. Abdullah YALÇIN	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	Prof. Dr. Abdullah YALÇIN Veteriner Fakültesi Biyokimya A.D. Email: ayalcin@uludag.edu.tr Tel: 224 2941233	
17	Website:		
18	Objective of the Course:	Comprehension of general properties of carbohydrates that are required for cellular functions, and understanding and recognition of carbohydrate energy metabolism and enzymes involved in carbohydrate metabolism	
19	Contribution of the Course to Professional Development:	Comprehension of carbohydrate metabolism helps one better understand the metabolic basis of diseases	
20	Learning Outcomes:		
		1	Ability to give general information about carbohydrates
		2	Ability to define chemical properties and presence of carbohydrates in organism.
		3	Ability to comprehend digestion and absorption of carbohydrates.
		4	Ability to comprehend metabolic pathways of carbohydrates and their relationship with each other.
		5	Ability to define methods of energy generation from carbohydrates.
		6	Ability to comprehend enzymatic and hormonal control of carbohydrate metabolism.
		7	Ability to make connections between carbohydrate metabolism and lipid and protein metabolisms.
		8	Being able to reach novel information about properties, types, and metabolism of carbohydrates.
		9	Ability to disseminate knowledge gained about carbohydrates.
		10	
21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	

1	Definition and classification of carbohydrates	
2	Characteristics of monosaccharides and isomerism	
3	Monosaccharide derivatives	
4	Disaccharides, glycosidic bonds, physiochemical properties	
5	Polysaccharides and functions	
6	Thermodynamic basis of metabolic reactions and energy production	
7	Glycolysis	
8	Regulation of glycolysis	
9	TCA cycle	
10	Oxidative phosphorylation	
11	Gluconeogenesis	
12	Pentose Phosphate pathway	
13	Glycogen metabolism	
14	Hormonal control of carbohydrate metabolism	

22	Textbooks, References and/or Other Materials:	1- Voet D, Voet JG. Biochemistry, John Wiley & Sons Inc., 3rd Ed., 2004 2- Nelson D & Cox M. Lehninger Principles of Biochemistry, 9th ed. W. H. Freeman & Co. 2013.
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Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Midterm Exam	0	0.00	
Practicals/Labs	0	0.00	0.00
Self study and preparation	14	5.00	70.00
Home work-project	0	0.00	
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Total	1	100.00	
Field Studies	0	0.00	0.00
Midterm Exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	20.00	20.00
Total	1	100.00	
Total Work Load			118.00
Total work load/ 30 hr			3.93
ECTS Credit of the Course			4.00

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	3	4	4	4	5	4	4	4	5	4	4	5	3	5	4	4
ÖK2	4	4	5	3	5	4	3	4	4	4	5	4	4	4	4	3
ÖK3	4	3	4	4	3	4	5	3	4	4	4	4	5	5	3	4
ÖK4	4	4	3	4	4	4	4	4	5	5	4	5	4	4	4	4

ÖK5	4	4	3	4	3	4	4	4	4	5	5	5	4	4	4	3
ÖK6	5	4	3	4	4	3	4	4	4	3	4	3	4	4	5	3
ÖK7	3	4	3	4	4	2	5	4	3	4	5	4	4	3	4	4
ÖK8	3	4	4	5	3	4	4	5	4	4	4	4	5	4	3	4
ÖK9	4	4	4	3	4	5	5	4	5	3	5	4	4	4	3	5
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			