



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Carbohydrate Biochemistry							
Course Code		KİM654		Couse Level		Third Cycle (Doctorate Degree)			
ECTS Credit	8	Workload	200 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of this course is to teach structure, function and metabolism of carbohydrates.							
Course Content		Investigation of chemical structures of carbohydrates. Catabolism and anabolism of carbohydrates. Energy metabolism and photosynthesis.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Case Study, Individual Study					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	35
Assignment	3	45

Recommended or Required Reading

1	Instructor notes
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Week	Weekly Detailed Course Contents	
1	Theoretical	Structure of the carbohydrates
2	Theoretical	Classification, and chemical reactions of carbohydrates
3	Theoretical	Catabolism, digestion and adsorption of the carbohydrates
4	Theoretical	Glycolitic pathway, glycogen, and ATP production
5	Theoretical	Glycolitic pathway, glycogen, and ATP production
6	Theoretical	Biosynthesis of carbohydrates, glyconeogenesis
7	Theoretical	Photosynthesis and photorespiration
8	Theoretical	Photosynthesis and photorespiration
9	Theoretical	Regulation of carbohydrate metabolic pathway
10	Intermediate Exam	Midterm exam
11	Theoretical	Hormonal and enzymatic regulation of metabolic pathways
12	Theoretical	Hormonal and enzymatic regulation of metabolic pathways
13	Theoretical	Integration of carbohydrate and lipid metabolisms
15	Theoretical	Carbohydrate metabolism in different physiological and pathological conditions
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Assignment	6	0	12	72
Midterm Examination	1	30	2	32
Final Examination	1	52	2	54
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = ECTS				8

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Learns the chemical structure and nomenclature of carbohydrates.
2	Knows the catabolism of carbohydrates.
3	Knows the reactions of energy metabolism.



4	Learns the control of metabolic pathways
5	Learns the basic principle of photosynthesis.

Programme Outcomes (Chemistry Doctorate)

1	Depending on the master degree competences, develops, insights and innovates current and advanced knowledge and/or research in proficiency level.
2	Gains high skill levels in using research methods in the field of his/her study.
3	Comprehends the interaction between disciplines related to his/her field. Reaches to original results using his/her expertise in order to analyze, synthesize and evaluate new and complicated ideas.
4	Enlarges the boundaries of his/her field of knowledge by publishing at least one research paper in national and/or international peer-reviewed journals.
5	Defends his/her original opinions related to his/her field before authority and communicates effectively illustrating his/her competence.
6	May communicate and debate written, orally and visually in European Language Portfolio level C1.
7	Follows the developments in computer software and information and communication technologies developed for his/her research area and uses these in order to solve research problems.
8	Collaborates for scientific research with national and international research teams.
9	Contributes to the course of creation and maintenance of knowledge based society and by introducing the scientific, social and cultural developments to the society he/she is living in.

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

	L1	L2	L3	L4	L5
P1	5	5	4	3	5
P2			3	2	
P3	3	3	3		4
P4	3	3	2		
P8	2	2	2		

