

ORGANIC CHEMISTRY

1	Course Title:	ORGANIC CHEMISTRY	
2	Course Code:	KIM2433	
3	Type of Course:	Compulsory	
4	Level of Course:	First Cycle	
5	Year of Study:	2	
6	Semester:	3	
7	ECTS Credits Allocated:	4.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Doç. Dr. AYHAN YILDIRIM	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	Prof. Dr. Ayhan YILDIRIM yildirim@uludag.edu.tr 0 224 29 41 771	
17	Website:		
18	Objective of the Course:	The aim of the course is to teach the basic concepts and topics in organic chemistry, to develop the students' ability to solve organic chemistry problems and to enable students to develop their ability to use organic chemistry in molecular biology and genetics studies.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Learning basic organic chemistry terms
		2	Comprehending the general properties of organic compounds
		3	Learning stereochemistry and three dimensional structures of organic and biomolecules and drawing related structures
		4	Writing organic reactions and their mechanisms
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	

1	Chemical bonds and molecular structures The importance of organic chemistry, chemical bond types, Lewis structures, formal load, VBT, MOT, hybridization, VSEPR			
2	Functional groups, molecular formulas, intermolecular forces, resonance Dipole moment, molecular polarity, intermolecular forces, H-bond and its effects, London distribution forces, representations of organic molecules, line bonds, compacted formulas, three dimensional structures, functional groups, resonance			
3	Organic acids and bases Acid-base definitions, curve arrows, Ka and pKa constants of organic acids, stabilization of anions in organic acids, ARO (atom, resonance, inductive effect, orbital)			
4	Alkanes and cycloalkanes Nomenclature of alkanes and cycloalkanes, special and systematic nomenclature, IUPAC rules, bicyclic structures, structure isomers, functional group isomers, sources and use of alkanes, properties, combustion reactions, Newman projection, free radical reactions			
5	Conformation analysis and stereochemistry			
Activities		Number	Duration (hour)	Total Work Load (hour)
Theoretical	Isomers, diastereomers, Cahn-Ingold-Prelog	14	3.00	42.00
Practicals/Labs		0	0.00	0.00
Self study	Alkenes, structures, syntheses and reactions	14	3.00	42.00
Homeworks		0	0.00	0.00
Projects	Properties and nomenclature of alkenes, industrial synthesis methods, stereoisomers	0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams	Alkenes, E and Z isomerism	1	12.00	12.00
Others		0	0.00	0.00
Final Exams	Hydrohalogenation, Markovnikov rule, Carbocation cycles, hydration.	1	24.00	24.00
Total Work Load				120.00
Total work load/ 30 hr				4.00
ECTS Credit of the Course				4.00
8	Substitution reactions Alkyl halides, SN2 and SN1 mechanisms, Substitution reactions in biological systems			
9	Alcohols, ethers, epoxides, thiols Properties of alcohols, ethers, epoxides and thiols, their properties and nomenclature, usage areas, synthesis methods, reactions, spectroscopic properties			
10	Aldehydes and ketones Natural compounds containing aldehyde and ketone groups, structure and properties of aldehydes and ketones, nomenclature, synthesis methods, reactions, Wittig reaction, spectroscopic properties			

ÖK4	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																	
Contrib ution Level:	1 very low			2 low			3 Medium			4 High			5 Very High				