ORGANIC CHEMISTRY LABORATORY II

1	Course Title:	ORGANIC CHEMISTRY LABORATORY II
2	Course Code:	KIM2014
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	4
7	ECTS Credits Allocated:	4.00
8	Theoretical (hour/week):	0.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	4
11	Prerequisites:	
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. MUSTAFA TAVASLI
15	Course Lecturers:	Prof. Dr. Mustafa TAVASLI Doç. Dr. Nevin ARIKAN ÖLMEZ
16	Contact information of the Course Coordinator:	coskun@uludag.edu.tr +90 224 29 41 725 Fen-Edebiyat Fakültesi, Kimya Bölümü, 16059 Görükle, Bursa TÜRKİYE
17	Website:	
18	Objective of the Course:	Experimental realization of various reactions learned in Organic Chemistry I and Organic Chemistry II lessons, and synthetic applications of various classes of organic compound by the students
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

		1	Recognition of equipment and glass material which is necessary for the synthesis experiment in organic chemistry lab. Acquiring the ability to establish the relevant reaction apparatus.
		2	Be able to following the reaction, properly termination and isolation of the synthesized product with the appropriate purification method.
		3	Recognize and know the literature of chemistry, survey various computerized literature databases of organic chemistry
		4	Ability to determine the structure of an unknown organic compound given to him in the laboratory, with remembering the functional groups of organic compounds and their reactions with each other
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21	Course Content:	

Course Content:

Week	Theoretical	Practice
1		Introduction
2		Fischer esterification reaction Esters and their properties Various methods of preparation of esters preparation of acetate esters of acetic acid with various alcohols catalyzed by H2SO4. Quiz
3		Grignard reaction Organometallic compounds Establishment of the apparatus designed for the Grignard reaction synthesis and characterization of triphenyl methanol with the suitable reaction sequence. Quiz
4		Survey the literature Introduction to the literature of chemistry Introduction of databases related to the organic chemistry Selection of research topics and given to each student.
5		Diels-Alder reaction Introduction of the cycloaddition reactions And the introduction of dienes and dienophiles Mechanism and various examples of Diels-Alder reaction stereochemistry of the reaction Realization of Diels-Alder reaction between the sulpholene (1,3-butadiene source) and maleic anhydride. Quiz
6		Tetrafenilsiklopentadienon synthesis (Week 1)
7		Tetrafenilsiklopentadienon synthesis (Week 2) Conversion of benzoine into benzil with HNO3 the dibenzyl ketone and benzil. Quiz
8		Synthesis of adipic acid from cyclohexanone Oxidation of cyclohexanone to adipic acid in the presence of KMnO4. Quiz
9		Orientation of toluene Electrophilic aromatic substitution reactions
10		Problem solving
11		Synthesis of butyl bromide Nucleophilic substitution reactions in organic chemistry H2SO4 . Quiz
12		Organic qualitative analysis (known sample analysis) Fusion of known organic compund with Na and determination its elements, solubility tests, Functional group tests sulphanilic acid Melting point determination, determining the structure of sulphanilic acid by using the Handbooks .
13		Organic qualitative analysis (unknown sample analysis) Fusion of unknown organic compund with Na and determination its elements, solubility tests, Functional group tests sulphanilic acid Melting point determination, determining the structure of unknown organic compound by using the Handbooks .

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	0	0.00	0.00
Practicals/Labs	14	4.00	56.00
Self study and preperation	14	1.00	14.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	25.00	25.00
Others	0	0.00	0.00
Final Exams	1	25.00	25.00
Total Work Load			120.00
Total work load/ 30 hr			4.00
ECTS Credit of the Course			4.00

14		Organic Qualitative Analysis (unknown samples analysis) Completation of trials missing 11 th week to determine the structure of unknown organic compound .

22	Textbooks, References and/or Other Materials:	1) G. Solomons ve C. Fryhle ;(Çev. Ed. G. Okay ve Y. Yıldırır), Organik Kimya; Literatür Yayınları, 2002. 2) Kenneth L. Williamson ; Macroscale and Microscale Organic Experiments,; D.C. Healt and Company, 1989. 3) Brian S. Furniss, Antony J. Hannaford, Peter W.G. Smith, Austin R. Tatchell; Vogel's Textbook of Practical Organic Chemistry,; Longman Scientific &Technical,; 1989. 4) Ender Erdik, Metin Obalı, Nadire Yüksekışık, Atilla Öktemer, Tarık Pekel, İhsanoğlu; Denel Organic Kimya; A.Ü.F.F Döner Sermaye İşletmesi yayınları, 2000.

23	Assesment

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	25.00
Quiz	1	25.00
Home work-project	0	0.00
Final Exam	1	50.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade	50.00	
Contribution of Final Exam to Success Grade	50.00	
Total	100.00	
Measurement and Evaluation Techniques Used in the Course		

24	**ECTS / WORK LOAD TABLE**

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	5	5	5	5	5	5	0	0	0	0	5	0	0	0	0	0
ÖK2	0	5	5	0	5	5	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	5	0	5	5	0	4	0	0	0	0	0	0
ÖK4	5	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications				
Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**