ORGANIC CHEMISTRY LABORATORY

1	Course Title:	ORGANIC CHEMISTRY LABORATORY	
2	Course Code:	KIM2151	
3	Type of Course:	Compulsory	
4	Level of Course:	First Cycle	
5	Year of Study:	2	
6	Semester:	3	
7	ECTS Credits Allocated:	2.00	
8	Theoretical (hour/week):	0.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	2	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Doç. Dr. SERKAN ÖZTÜRK	
15	Course Lecturers:	-	
16	Contact information of the Course Coordinator:	Doç. Dr. Serkan ÖZTÜRK serkanozturk@uludag.edu.tr (224)-2955093 Bursa Uludağ Üniversitesi Fen-Edebiyat Fakültesi Kimya Bölümü	
17	Website:		
18	Objective of the Course:	The aim of the course is to provide students with the necessary laboratory skills related to organic synthesis, isolation and characterization methods.	
19	Contribution of the Course to Professional Development:	To learn the main isolation techniques used in the laboratory, to gain the ability to make organic synthesis and organic chemistry laboratory culture	
20	Learning Outcomes:		
		1	Learn the risks (personal and environmental) associated with organic compounds and use substances with this awareness
		2	To see the general properties of some organic compounds in practice
		3	Awareness of organic synthesis
		4	To gain knowledge and experience about the isolation of the product obtained as a result of organic synthesis
		5	Gaining organic chemistry laboratory culture
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21	Course Content:		

Course Content:

Week	Theoretical	Practice
1		Introduction, General information, Safety rules

2		Crystallization: Crystallization of salicylic acid from salicylic acid - sand mixture
3		Distillation: Separation of miscible ethyl acetate and 1-butanol liquids by simple and fractionated distillation techniques
4		Chemically active extraction: Separation of a solid mixture of 3-nitroaniline and benzoic acid by chemically active extraction based on acid-base reactions. (I. Quiz)
5		Isolation of caffeine from tea: Isolation of caffeine from tea solution by extraction method
6		Thin layer chromatography: Definition and types of chromatography, separation of two substances by thin layer chromatography and calculation of Rf values
7		Problem solving, Midterm
8		Reduction of camphor: Reduction of camphor compound to isoborneol compound with NaBH4
9		Fischer esterification reaction: Esters and their properties, Various preparation methods of esters, Preparation of acetate esters of acetic acid with various alcohols catalyzed by H2SO4
10		Diels-Alder reaction: Introduction of dienes and dienophiles, mechanism of the Diels-Alder reaction, realization of the Diels-Alder reaction between maleic anhydride and 3-sulfolene. (II. Quiz)
11		Synthesis of adipic acid from cyclohexanone: Oxidation reactions in organic chemistry, Oxidation of cyclohexanone to adipic acid with KMnO4
12		Butyl bromide synthesis: Nucleophilic substitution reactions in organic chemistry, synthesis of n-butyl
13		Problem solving, (III. Quiz)
14		
22	Textbooks, References and/or Other Materials:	1) G. Solomons ve C. Fryhle ,(Çev. Ed. C. Okay ve T. 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 A.Ü.F.F Döner Sermaye İşletmesi yayınları, 2000.
23	Assesment	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	0	0.00	0.00
Practicals/Labs	14	2.00	28.00
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	8.00	8.00
Others	1	2.00	2.00
Final Exams	1	8.00	8.00
Total Work Load			68.00
Total work load/ 30 hr			2.00
ECTS Credit of the Course			2.00

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	20.00
Quiz	1	20.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00

Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	There will be 2 midterm grades in the course evaluation. One is the normal midterm exam and the other one is a combination of quizzes and reports. The contribution percentage of the two midterm grades is 40% in total. There will be a final grade and its percentage is 60%.

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
ÖK5	0	0	0	0	0	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**