

# SEPERATION AND PURIFICATION TECHNIQUES IN ORGANIC CHEMISTRY

1	Course Title:	SEPERATION AND PURIFICATION TECHNIQUES IN ORGANIC CHEMISTRY	
2	Course Code:	KIM5029	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	6.00	
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:	Prof. Dr. NEVİN ARIKAN ÖLMEZ	
15	Course Lecturers:	Prof.Dr.Mustafa Tavaslı	
16	Contact information of the Course Coordinator:	narikan@uludag.edu.tr Tel: 0 (224) 294 1731 Uludağ Üniversitesi Fen-Edebiyat Fakültesi Kimya Bölümü, Görükle/BURSA 16059	
17	Website:		
18	Objective of the Course:	The aim of the course is to provide theoretical and practical skills to master students with laboratory techniques used in organic chemistry.	
19	Contribution of the Course to Professional Development:	To learn advanced separation and purification techniques used in Organic Chemistry laboratories	
20	Learning Outcomes:		
		1	Developing of the knowledge and experience about the isolation of the product after organic synthesis
		2	Increasing of the info and accumulation about organic synthesis
		3	Earning the ability to crack against to problems that could occur in thesis works of the students studied master science in organic chemistry.
		4	Developing the organic chemistry laboratory culture and skill
		5	
		6	
		7	
		8	
		9	
		10	
21	Course Content:		
		<b>Course Content:</b>	
Week	Theoretical	Practice	

1	Synthesis of organic compounds -Planning of the reaction -Set up of installation -Reaction completion			
2	Filtering techniques -Classification of filtering techniques -Materials used in filtering techniques -Applications of filtering techniques			
3	Crystallization -Crystallization steps -Solvents used in crystallization and selection of the solvent -Applications of crystallization technique			
4	Distillation -Classification of distillation techniques -Differents between of the distillation techniques -Applications of distillation techniques			
5	Sublimation and Extraction -Formation conditions of sublimation -Samples and applications to the sublimated compounds -Classification of extraction techniques -Solvents used in extraction and selection of the solvent			
6	Chromatographic techniques -Column chromatography technique -Adsorbents and moving phases used in			
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical	Thin layer chromatography technique -Adsorbents and moving phases used in thin	14	3.00	42.00
Practicals/Labs		0	0.00	0.00
Self study	Application of thin layer chromatography	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	Theory of Gas chromatography (GC) technique	1	48.00	48.00
Others		0	0.00	0.00
Final Exams	GC apparatus and applications	1	72.00	72.00
Total Work Load				176.00
Total work load/ 30 hr				5.87
ECTS Credit of the Course				6.00
11	Drying -Drying process and bringing to constant weigh -Equipments used in drying process -Applications of drying process			
12	Determination of physical properties -Central physical properties of organic compounds -Variations of the physical properties of organic compounds -Determination of melting point and the relationship between melting point and purity			

<b>13</b>	Optical activity -Description of optical activity -Which compounds are optical active? -Chirality and samples to compounds contained chiral carbon -Enantiomerism and samples to the compounds shown enantiomer property -Diastereomerism and samples to the compounds shown diastereomer property -Meso compounds	
<b>14</b>	Specific angle of rotation -Description of the specific angle of rotation -Factors that affect angle of rotation -Experimental determination of the specific angle of rotation	

<b>22</b>	Textbooks, References and/or Other Materials:	1) Techniques and experiments for organic chemistry. Addison Ault 2) Organic chemistry microscale laboratory techniques. R. Wooley, D. Shelley, B. Hinshaw 3) Laboratory techniques for organic chemistry. Ralph J. Fessenden, Joan S. Fessenden
-----------	---	--

<b>23</b>	Assesment	
-----------	-----------	--

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	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	It is evaluated by midterm exam, and final exam, which consists of classical questions, and homework.	

<b>24</b>	<b>ECTS / WORK LOAD TABLE</b>
-----------	-------------------------------

<b>25</b>	<b>CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS</b>															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	5	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0
ÖK3	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
ÖK4	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>LO: Learning Objectives    PQ: Program Qualifications</b>																
<b>Contribution Level:</b>	<b>1 very low</b>		<b>2 low</b>		<b>3 Medium</b>		<b>4 High</b>		<b>5 Very High</b>							