

HETEROCYCLIC CHEMISTRY

1	Ders Adı:	HETEROCYCLIC CHEMISTRY
2	Ders Kodu:	KIM4048
3	Ders Türü:	Seçmeli
4	Ders Seviyesi	Lisans
5	Dersin Verildiği Yıl:	4
6	Dersin Verildiği Yarıyıl	8
7	Dersin AKTS Kredisi:	6.00
8	Teorik Ders Saati (saat/Hafta)	3.00
9	Uygulama Ders Saati(saat/Hafta)	0.00
10	Laboratuvar Ders Saati (saat/hafta) :	0
11	Dersin Önkoşulu:	None However, it is strongly recommended that students should have read Organic Chemistry I and Organic Chemistry II.
12	Dersin Dili:	İngilizce
13	Dersin Veriliş Şekli:	Yüz yüze
14	Dersin Koordinatörü:	Dr. Öğr. Üyesi MELİHA ÇETİN KORUKÇU
15	Dersi Veren Diğer Öğretim Elemanları:	Prof. Dr. Necdet COŞKUN
16	Koordinatör İletişim Bilgileri:	melihacetin@uludag.edu.tr +90 224 29 41 730
17	Dersin WEB adresi:	
18	Dersin Amacı:	The aim of the course is to investigate the structure, synthesis and reactivity of heterocyclic compounds.
19	Dersin Mesleki Gelişime Katkısı:	To understand the importance and the place of heterocyclic compounds among the other organic compounds
20	Dersin Öğrenme Kazanımları:	
	1	Understanding the importance and the place of heterocyclic compounds among the other organic compounds
	2	Learning the nomenclature of the heterocyclic compounds
	3	Learning the syntheses and properties of heterocyclic compounds
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21	Dersin İçeriği:	
Hafta	DERS İÇERİKLERİ	
	Teorik	Uygulama

1	Introduction to the chemistry of Heterocyclic compounds. Nomenclature of Heterocyclic compounds.	
2	Aromatic Heterocyclic compounds: Six and five-membered six pi electron containing systems. Benzofused heterocyclic compounds. Other fused heterocyclic compounds.	
3	Some criteria for aromaticity in heterocyclic compounds: Bond distances, ring flow and chemical shift, thermochemical criteria for aromaticity. Tautomerism in heterocyclic compounds.	
4	Nonaromatic heterocyclic compounds: Bond angle strain, some results of bond angle strain, angle strain and torsion energy barriers in big rings.	
5	The effects of bond distance and van der Waals radius to conformations of saturated six, four and five membered flexible heterocycles.	
6	Introduction of five membered ,one heteroatom containing heterocyclic compounds. Pyrroles: Ring syntheses, substitution reactions over nitrogen atom.	
7	Substitution reactions over carbon atom at pyrrol, addition and cycloaddition reactions. Properties of substituted pyrroles, some pyrrole based natural compounds.	
8	Furans: Ring syntheses, electrophilic substitution reactions, nucleophilic substitution reactions, cycloaddition reactions, ring opening reactions. Properties of substituted furans.	
9	Thiophens: Ring syntheses, electrophilic substitution reactions, nucleophilic and radicalic substitution reactions, cycloaddition reactions, reductive desulphurization, photochemical isomerization. Properties of substituted thiophens.	
10	Indoles and related compounds: Ring syntheses, acidic metallation treactions, reactions with electrophiles, oxidation and reduction. Properties of some substituted indoles.	
11	Six membered and one heteroatom containing compounds. Pyridines: Ring syntheses, some properties of pyridine chemistry, alkalinity, alkyllation, acylation and complexation over nitrogen.	
12	Electrophilic substitutions of pyridine over carbon atoms, nucleophilic substitutions. Dehydropyridines, dihydropyridinies, pyridine-N-oxides, hydroxy and aminopyridines, pyridine carboxylic acids.	
13	Quinolines and isoquinolines: Syntheses of quinoline and isoquinolines. Electrophilic substitutions over carbon atoms.	
14	Nucleophilic substitutions of quinoline and isoquinoline, nucleophilic addition, oxidative ring opening, N-oxides.	

22	Ders Kitabı, Referanslar ve/veya Diğer Kaynaklar:	[1] T.L.Gilchrist, Heterocyclic Chemistry, 1985 [2] J.A.Joule aK.Mills, Heterocyclic Chemistry, Chapman and Hall, Cambridge, 2000
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23	Değerlendirme
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YARIYIL İÇİ ÇALIŞMALAR	SAYISI	KATKI YÜZDESİ
Ara Sınav	1	40.00
Kısa Sınav	0	0.00
Ödev	0	0.00
Yıl Sonu Sınavı	1	60.00
Toplam	2	100.00
Yıl içi çalışmalarının Başarıya Oranı		40.00
Finalin Başarıya Oranı		60.00
Toplam		100.00
Kullanılan Ölçme ve Değerlendirme Yaklaşımları		Yazılı sınav

24	AKTS / İŞ YÜKÜ TABLOSU
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ETKİNLİK	SAYISI	Süresi (Saat)	Toplam İş Yükü (Saat)
Teorik Dersler	14	3.00	42.00
Uygulamalı Dersler	0	0.00	0.00
Sınıf Dışı Ders Çalışma Süresi (Ön çalışma, pekiştirme)	14	0.50	7.00
Ödevler	0	0.00	0.00
Projeler	0	0.00	0.00
Arazi Çalışmaları	0	0.00	0.00
Arasınavlar	1	38.00	38.00
Diğer	0	0.00	0.00
Yarıyıl Sonu Sınavı	1	70.00	70.00
Toplam İş Yükü			157.00
Toplam İş Yükü / 30 saat			5.23
Dersin AKTS Kredisi			6.00

25	PROGRAM YETERLİLİKLERİ İLE DERS ÖĞRETİM KAZANIMLARI İLİŞKİSİ TABLOSU															
	PY1	PY2	PY3	PY4	PY5	PY6	PY7	PY8	PY9	PY10	PY11	PY12	PY13	PY14	PY15	PY16
ÖK1	3	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
ÖK3	3	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0
ÖK: Öğrenme kazanımlar PY: Program yeterlilikleri																
Katkı Düzeyi:	1 çok düşük			2 Düşük			3 Orta			4 Yüksek			5 Çok Yüksek			