

معلومات المقرر \* (Course Information):

اسم المقرر:	كيمياء عضوية حلقة غير متجانسة
رقم المقرر:	CHM ٢٢٣
اسم ورقم المتطلب السابق:	كيمياء عضوية -٢ ، CHM222
اسم ورقم المتطلب المرافق:	لا يوجد
مستوى المقرر:	الرابع
الساعات المعتمدة:	٣ ساعات معتمدة

<b>Module Title:</b>	Chemistry of heterocyclic compounds
<b>Module ID:</b>	CHM 223
<b>Prerequisite (Co-requisite) :</b>	Organic chemistry-2, CHM222
<b>Co-requisite :</b>	None
<b>Course Level:</b>	Fourth level
<b>Credit Hours:</b>	3 Hours

وصف المقرر :

Module Description

The course of Heterocyclic Compounds Chemistry is presented in the fourth level with 3 credit hours. This course provides a systematic study of the theories and principles of heterocyclic compounds with a focus on the aromatic heterocyclic compounds. This course provides concepts and knowledge in nomenclature, synthesis, reactions and physical properties of heterocyclic compounds. It covers heterocyclic compounds. Containing one O-, N-, and S - heteroatom in five- and six- membered ring and heterocyclic compounds containing two heteroatoms in five-, and six-membered ring and some of their Derivatives. It emphasizes the biologically active natural products containing heterocyclic rings. The course of Heterocyclic Compounds Chemistry Identifies the medical and biological importance of some of these heterocyclic compounds and its aspect of benefit. Synthesis of heterocyclic compound, Perform the standard techniques used in practical heterocyclic compounds.





Module Aims

أهداف المقرر :

1	Recognize a fundamental theoretical understanding of heterocyclic chemistry.	١
2	Explain the physical and chemical properties of five and six membered ring heterocyclic compounds, which contain two or more heteroatoms.	٢
3	Provide concepts and knowledge in nomenclature, synthesis, reactions and physical properties of heterocyclic compounds.	٣
4	Identify the medical and biological importance of some of these heterocyclic compounds and its aspect of benefit.	٤
5	Covers heterocyclic compounds. Containing one O-, N-, and S - heteroatom in five- and six-membered ring and heterocyclic compounds containing two heteroatoms in five-, and six-membered ring..	
5	Research and present information on selected topics from the course using various modes of communication (oral, written, and visual	
6	Perform collaborative laboratory explorations to reinforce understanding of concepts in heterocyclic compounds	

Learning Outcomes:

مخرجات التعليم:

<b>Upon successful completion of this course, the student will be able to :</b>		
1	Recognize fundamental concepts and theories of heterocyclic organic compounds.	١
2	Explain synthesis and reactions of 5- and 6-membered heterocyclic compounds.	٢
3	Identify the medical and biological importance of some of these heterocyclic compounds and its aspect of benefit.	٣
4	Analyze the Information related to Heterocyclic Compounds	٤
	Draw and distinguish structures and formulas of Heterocyclic Compounds	
5	Predict the possible chemical reactions, its steps and the affecting factors and therefor its properties.	٥
6	Demonstrate proficiency in organic chemical laboratory techniques.	





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Contents:

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
4	2	Classification and nomenclature of heterocyclic compounds
6	3	Chemistry of five membered aromatic heterocyclic compounds contain one heterocyclic atom such as (pyrrole furan and thiophene) and some of their derivatives with an emphasis on structural characteristics , physical and chemical properties, Synthesis and reactions.
2	1	Chemistry of fused 5-membered heterocyclic compounds with an emphasis on structural characteristics , physical and chemical properties, Synthesis and reactions
4	2	Chemistry of six membered aromatic heterocyclic compounds contain one heterocyclic atom and some of their derivatives with an emphasis on structural characteristics , physical and chemical properties, Synthesis and reactions.
2	1	Chemistry of fused 6-membered heterocyclic compounds with an emphasis on structural characteristics , physical and chemical properties, Synthesis and reactions
6	3	Chemistry of five membered ring heterocyclic compounds with two or more than one heteroatom with an emphasis on structural characteristics , physical and chemical properties, Synthesis and reactions.
4	2	Chemistry of six membered ring heterocyclic compounds with two or more than one heteroatom with an emphasis on structural characteristics , physical and chemical properties, Synthesis and reactions.
2	1	Study importance of medical, biological and applications of some of these heterocyclic compounds
30	15	Total
		Practical part : Synthesis of heterocyclic compound, Perform the standard techniques used in practical heterocyclic compounds Plan and carry out a multi-step synthesis using a prescribed procedure. Measure and report relevant physical properties of prepared compounds. Educate the students with different concepts of heterocyclic compounds by doing experiments. The students carry out set of experiments that exposes them to various experimental techniques in organic chemistry. single step and multistep synthesis.
26	13	Total





Textbook and References:

الكتاب المقرر والمراجع المساندة:

ISBN	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم الكتاب المقرر Textbook title
ISBN: 978-1-4051-3300-5	٢٠١٠	Wiley-Blackwe	John A.Joule,	Heterocyclic Chemistry
ISBN	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم المرجع Reference
ISBN: 978-0-470-56669-5	٢٠١٠	Wiley	Louis D. Quin,	Fundamentals of Heterocyclic Chemistry: Importance in Nature and in the Synthesis of Pharmaceuticals

\* يتم تعبئة معلومات المقرر فقط باللغتين العربية والانجليزية وباقي المعلومات بلغة التدريس المعتمدة ويكرر لكل مقرر في الخطة الدراسية

\* Course Information should be filled in Arabic and English. Other information should be filled using the approved teaching language at the college.



