

معلومات المقرر \* (Course Information):

اسم المقرر:	الكيمياء الخضراء
رقم المقرر:	CHEM 454
اسم ورقم المتطلب السابق:	لا يوجد
اسم ورقم المتطلب المرافق:	لا يوجد
مستوى المقرر:	المستوى الثامن
الساعات المعتمدة:	2
Module Title:	Green Chemistry
Module ID:	CHM 454
Prerequisite (Co-requisite) :	No requests
Co-requisite :	No requests
Course Level:	Eighth Level
Credit Hours:	2 Credit Hours

Module Description

وصف المقرر :

The course will introduce the design of chemical products and processes that reduce or eliminate the use and generation of hazardous substances, The primary emphasis will present the fundamentals of the 12 principles of green chemistry, and explore relevant examples of their practical use in commercial applications. Two lecture hours per week. Two Credit hours.

Module Aims

أهداف المقرر :

1	This course aims to familiarize students with the basic principles of Green Chemistry and how the chemical processes can be designed, developed and run in sustainable way.
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**Learning Outcomes: By the end of my course, students should be able to**

1	Demonstrate the understanding of essential principles of Green Chemistry.	
2	Identify the benefit of green chemistry in our environment.	
3	Apply knowledge and skill to solve problems relating to course concept.	
4	Analyze the information related to green chemistry.	
5	Work independently and as part of a team.	
6	Using a computer as a tool in writing, drawing chemical structures and data analysis to communicate scientific information	

**Course Contents:**

محتوى المقرر:

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
4	2	Introduction to the Green Chemistry What is Sustainability?
6	3	The 12 principles of Green Chemistry.
2	1	Toxicology and green Chemistry.
2	1	Environmental Issues, Climate and green Chemistry.
2	1	Plastic and green Chemistry.
6	3	Traditional way of comparing reactions: <ul style="list-style-type: none"> <li>Percentage of Yields.</li> <li>Atom economy.</li> <li>Effecting mass yield.</li> </ul>
2	1	Examples of Green reaction.
6	3	Is the humane life sustainable? <ul style="list-style-type: none"> <li>The usage of the energy from burning fuel</li> <li>Climate histories</li> <li>Oil and gas production and usage</li> <li>Alternative of oil and fuel</li> </ul>







30	15	Total
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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
9783527307159.ISBN-	2007	Wiley-VCH Verlag GmbH & Co. KGaA	Sheldon, R. A. Arends, I. W. C. E.; Hanefeld, U.	"Green Chemistry and Catalysis".
	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم المرجع Reference
	2018-02-16.	American Chemical Society".	Paul Anastas and John Warner	12 Principles of Green Chemistry

\* 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.



