

**معلومات المقرر \*:(Course Information)**

كيمياء حرارية	اسم المقرر:
CHEM335	رقم المقرر:
كيمياء ديناميكا حرارية CHM232	اسم ورقم المطلوب السابق:
لا يوجد	اسم ورقم المطلوب المرافق:
المستوى السادس	مستوى المقرر:
(2+2)3	الساعات المعتمدة:
<b>Module Title:</b>	<b>Kinetic chemistry</b>
<b>Module ID:</b>	<b>CHM335</b>
<b>Prerequisite (Co-requisite) :</b>	<b>CHM232, Chemistry of Thermodynamics</b>
<b>Co-requisite :</b>	<b>None</b>
<b>Course Level:</b>	<b>6<sup>th</sup> level</b>
<b>Credit Hours:</b>	<b>(2+2)3</b>

**Module Description**

**وصف المقرر :**

**Topic discussed in these course include: Some basic concepts of kinetic chemistry - Rate laws and effected factors. order of reaction, Rate laws for chemical reactions from zero, first, second, third, general, n, and examples of reactions of each rank, laws of speed for complex reactions, reverse reactions, parallel reactions, Sequence reactions - Effect of temperature on reaction velocity - Arrhenius equation - Effect of the catalyst on activation energy - Interaction theories.**

Experimental part is designed to complement the lecture material. Emphasis is placed on experimental methodology and data acquisition by assisting computer.

**Module Aims**

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|---|--|
| 1 | Knowledge about the basics of Kinetic chemistry. |
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**Learning Outcomes:**





2	Describe the general concepts of different types of chemical reactions kinetic	
3	describe the effect of temperature on the rate of reaction	
4	Determine the order of Chemical Reaction	
5	Outline of the general procedure of laboratory experiments.	
6	Apply the appropriate mathematical formula to solve problems relating to course concept	
7	Explain the results of electrochemical from Laboratory experiments.	
8	Work independently and as part of a team	
9	Demonstrate the ability to use the library resources and scientific data base to obtain information about topic, chemical, chemical technique or an issue relating to chemistry.	
10	Demonstrate a good and safe handling of laboratory chemicals, glassware and equipment during experiments.	

**Course Contents:**
**محتوى المقرر:**

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
2	1	Definitions of kinetic Chemistry (Kinetics of particles)
2	1	The rate of reaction and effected factor
2	1	The order of a chemical reaction and the molecularity of reaction
6	3	Integrated law of rate of reaction(Zero order, first order, second order, third order, general n order) , half life
4	2	Determination of the order of reaction from integrate method, isolation method, fractional life time method.
4	2	Complex interactions(chain reaction ,reverse reactions, parallel reactions, Sequence reactions)
2	1	Effect of temperature (Arrhenius equation)
2	1	Activation energy (Effect of the catalyst )
4	2	Theories that explain the occurrence of chemical reactions
2	1	Revision
<b>Practical</b>		
6	3	Measure the speed of chemical reaction (first order, second order)





6	3	<b>effect of concentration on the speed of reaction , determined the order of reaction</b>	
6	3	<b>Effect of temperature on the speed of reaction, Measuring activation energy</b>	
2	1	<b>Revision</b>	

**Textbook and References:**

**الكتاب المقرر والمراجع المساعدة:**

ISBN	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم الكتاب المقرر Textbook title
ISBN-10: 1119226643 ISBN-13: 978-1119226642	2017	Wiley	Jorge Ancheyta	Chemical Reaction Kinetics: Concepts, Methods and Case Studies 1 <sup>st</sup> Ed.
	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم المرجع Reference
ISBN-10: 0471621315 ISBN-13: 978-0471621317	1990	Wiley	James E. Brady	General Chemistry: Principles and Structure 5 <sup>th</sup> ed.
ISBN-13: 978-0198769866 ISBN-10: 0198769865	2018	Oxford University Press	Peter Atkins and etc.	Physical Chemistry 11 <sup>th</sup> ed.

\* يتم تعبئة معلومات المقرر فقط باللغتين العربية والإنجليزية وبباقي 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.



