

معلومات المقرر * (Course Information):

اسم المقرر:	كيمياء عامة- ٢
رقم المقرر:	CHM102
اسم ورقم المتطلب السابق:	كيمياء عامة- ١ ، CHM101
اسم ورقم المتطلب المرافق:	لا يوجد
مستوى المقرر:	المستوي الثاني
الساعات المعتمدة:	٣(٢+٢)
Module Title:	General Chemistry- 2
Module ID:	CHM102
Prerequisite (Co-requisite):	General chemistry-1, CHM-101
Co-requisite:	None
Course Level:	Second Level
Credit Hours:	3(2+2)

Module Description

وصف المقرر :

This course includes:

Principle of atomic structure (Bohr's theory , electromagnetic radiation, regions of electromagnetic radiations- wave length for each region). Quantum numbers, Electronic configurations for many electronic atoms- aufbau principle-Pauli exclusion principle- Hund's rule). Periodic table and Periodicity of properties with atomic number- ionization energy- electron affinity-electro negativity. Chemical bonding (ionic and covalent) Lewis structure, hybridization, resonance, introduction to valence bond theory. chemical kinetics, rate law and the relation between its variables.

Module Aims

أهداف المقرر:

1	Studying the Principle of atomic structure (Bohr's theory , electromagnetic radiation, regions of electromagnetic radiations- wave length for each region)
2	Studying the quantum numbers, Electronic configurations for many electronic atoms aufbau principle-Pauli exclusion principle- Hund's rule





3	Studying the periodic table and periodicity of properties with atomic number(ionization energy- electron affinity-electro negativity)	٣
4	Studying ionic bond and the factors that affect the ionic bonds. Lewis structure, covalent bonding, hybridization, resonance, introduction to valence bond theory	٤
5	Studying the chemical kinetics, rate law and the relation between its variables.	٥

مخرجات التعليم:

Learning Outcomes: successful students will be able to

1	Demonstrate knowledge and understanding of the basics and concepts in chemistry	١
2	Describe the electron configuration of the elements.	٢
3	Apply the knowledge and skill to solve problems relating to course concept	
4	Explain the fundament of the basic chemistry.	٣
5	Work independently and as part of a team	
6	Able to use a computer as a tool in writing, drawing chemical structures and Saudi Digital Library.	
7	Follow the safety precautions in the laboratory and perform the experiments in lab. Prepare standard solutions from solid or liquid materials Perform simple titration experiments in neutralization reactions	٦

Course Contents:

محتوى المقرر:

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
4	2	atomic structure
6	3	quantum numbers and electronic configuration of different elements
4	2	the periodic table and periodicity of properties with atomic number(ionization energy- electron affinity-electro negativity)
4	2	Chemical bonding
4	2	Hybridization of atomic orbitals (sp^3 , sp^2 , and sp) and molecular shapes – introduction to valence bond theory
4	2	Intermolecular interactions (van der Waals equation, intermolecular forces)





2	1	Acid-Base theories
2	1	Chemical Kinetics
Practical experiments for theoretical lectures.		
2	1	Safety in chemical lab and identification of apparatus and tools.
4	2	Preparation of standard and molar solutions
6	3	Preparation of standard solutions by dilution
6	3	Simple titrations
2	1	Determination of density
4	2	Determination of viscosity
2	1	Revision

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
978471528746	2000	John Wiley & Sons, Inc	James E. Brady	General Chemistry: Principles and Structure
ISBN	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم المرجع Reference
978-007-127220-9	2010	McGraw Hill	Raymond Chang	Chemistry 10th edition
13: 978-1-429-21812-2 1-4292-1812-6	2010	Freeman Publishers	Peter Atkins and Julio De Paula	Physical Chemistry
100078021510 139780078021510	2015	McGraw Hill	Raymond Change and Kenneth Goldsby	General Chemistry: The Essential concept

* 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.



