## توصيف مقرر دراسي

جامعة: المنصورة كلية: العلوم قسم: الكيمياء

				١ - بيانات المقرر
المستوى: الأول		الفيزيائية	أسم المقرر: أسس الكيمياء	الرمز الكودى :Chem 141
عملی: ۲	تمارین: ۱	نظری ۲:	عدد الوحدات الدراسية: ٣ ساعة معتمدة	التخصص: إحصاء وعلوم الحاسب

For students undertaking this course, the aims are to:	٢ ـ هدف المقرر:
1 - Develop the fundamental principles of chemistry and their applications	۱۰٫٫۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰
2 - Introduce the principles of gas laws and properties of gases.	
3 - Outline the basic information of thermochemistry and thermochemical laws.	
4 - Introduce the principles of solution chemistry and the properties of solution.	
5 - Outline the basic information of chemical equilibrium and ionic equilibrium	
3 - Outiline the basic information of chemical equinorium and fonic equinorium	<u>                                     </u>
a- Knowledge and Understanding :	<ul> <li>٣- المستهدف من تدر</li> <li>أ- المعلومات و</li> <li>المفاهيم:</li> </ul>
On completing this course, students will be able to:	المفاهده و
al - Explore the relation between pressure, temperature and volume to form different	رعت ميم .
gas laws. a2 - Learn the basics of thermochemistry.	
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a 3- Learn how to interpret graphical representations of physical phenomenon for gases and solution.	
a4 - Know the principles of solution chemistry.	
a5- Learn the principles of chemical equilibrium and the factors affecting the	
equilibrium state for chemical reactions	
a6 - Explore the Ionic equilibrium and know the relation between pH and pOH and the	
effect of salt effect and common ion effect on the solubility of sparingly soluble salts.	ب المالية
b- Intellectual Skills:	ب- المهارات الذهنية :
On completing this course, students will be able to:	الدهيية
b1- derive equations for gas properties	
b2- uses the principles thermochemistry to solve classical elementary problems	
b3 - use the principles of solution chemistry to solve problems for finding the	
concentration of solutions.	
b4 - apply principles of chemical equilibrium to common chemical reactions.	
b5 - apply the salt effect and common ion effect on the solubility of sparingly soluble	
salts.	m 1 1 . 91
c-Professional and Practical Skills:	ج- المهارات
On completing this course, students will be able to:	المهنية الخاصة
c1 - describe the various properties of gases	بالمفرر:
c2 - use the thermochemical equations a to determine different thermochemical	
parameters.	
c3 - use various relations to prepare solutions with different concentrations	
c4 - calculate the equilibrium constant for common chemical reactions	7 4 94 4 94
d-General and Transferable Skills:	د- المهارات العامة
On completing this course, students will be able to:	:
d1 - use computer and internet to collect date about scientific topics	
d2 - communicate with others and express what he understand.	
d3 - use the computer and software for making presentations	

A Kinetic theory of gases and real gases 3- Thermochemical equations, Hess law, Heat of combustion and heat of formation 4- Heat capacities and bond energies 5- Solutions, different ways to express concentration of solutions 6- Collegative properties 7- Chemical equilibrium and calculating the equilibrium constant 8- Lechatiter Principle and application to chemical reactions at equilibrium 9- Ionic Equilibrium, Acids and Bases and Buffer solution 10- Salt effect, common ion effect and solubility of sparringly soluble salts 11- practical 5.1 - Lecture using white board. 5.2- data show and internet. 6.1 - The same as normal students, only skeletal disabilities are allowed in the Faculty of Science.  1- quizzes 1- quizzes 1- quizzes 1- quizzes 2- home work assignments to assess 3- l-a5,bl,-b5,cl,-c4 3- practical exam 1- assess 1-a5,bl,-b5,cl,-c4 4- semester work 1- assessment 2- as	1- Gas laws	- محتوى المقرر:				
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ا - Elements of physical chemistry, Atkins, P. w., Publisher: W.H. Freeman, Oxford University Press, New York, 2005.  1 - www.google.com		7				
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(أ) مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسي

المحتويات للمقرر	أسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنیة	مهارات عامة
Gas laws.	1,2	a1,a3	b1	c1	d1
Kinetic theory of gases and real gases.	3	a1,a3	b1	c1	d1
Thermochemicl equations, Hess law, Heat of combustion and heat of formation.	4,5	a2	b2	c2	d1
Heat capacities and bond energies.	6	a2	b2	c2	d1
Solutions, different ways to express concentration of solutions.	7	a3,a4	b3	c3	d3
Collegative properties.	8	a3,a4	b3	c3	d3
Chemical equilibrium and calculating the equilibrium constant.	9	a5	b4	c4	d3
Lechatlier Principle and application to chemical reactions at equilibrium.	10	a5	b4	c4	d3
Ionic Equilibrium, Acids and Bases and Buffer solution	11	a6			d2
Salt effect, common ion effect and solubility of sparingly soluble salts	12	a6	b5		d2
practical physical chemistry	1-10			c1-c4	

أستاذ المادة: أ.د. / عصام عرفه حسن

رئيس مجلس القسم العلمي أ.د. / سالم السيد سمرة