



Course Detailed Description – Procedures of the Course Plan Committee /Faculty of Pharmacy

QF02/0408–1.0

Department	Pharmacy
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Course Name	Physical Pharmacy	Course No.	201111
Prerequisite	General Chemistry	Credit Hours	2
Number & date of course plan approval		Brief Description	See form QF02/0409

Intended Learning Outcomes	1-To make student able to carry chemical calculations 2- To enhance their abilities of subjects related to basic knowledge in physical and analytical chemistry such as kinetics , chemical equilibrium , chemical thermodynamics , and acid- base equilibrium		
Course Topics	1-Intermolecular Forces, Liquids and Solids: 2-Properties of solutions: 3-Chemical Kinetics: 4-Chemical Equilibrium: 5- Chemical Thermodynamics.		
Text Books	1-Chemistry Chemistry , The Central Science , Brown , Le May , Bursten, Prentice Hall , 12 th Edition (2012).		
References	1- Physical Pharmacy, Alfred Martin, Waverly International, 4 th edition.1993. 2-Chemistry, Chang, McGraw Hill, 9 th edition, 2007. 3-Chemistry, Zumdahl and Zumdahl, Houghton Mifflin, 7 th edition, 2007 4-Chemistry, The Molecular Nature of Matter and Change, Silberberg, McGraw Hill, 3ed edition, 2003. 5-General chemistry, Ebbing and Gammon, Houghton Mifflin , 9 th edition.		
<input type="checkbox"/> Grade Determination	1 st Exam = 25% 2 nd Exam = 25% Final Exam = 50%	<input type="checkbox"/> Practical Course Grade Determination	Course Work = 50% (Reports, Term Papers, Quizes) Final Exam = 50%

Course Outline

Week	Hours	Subjects	Chapters in Textbook	Notes
1	2	Characteristic of gas The gas law The ideal gas law Gas mixture and partial pressure	10	
2	2	The kinetic molecular theory Molecular effusion and diffusion Real gases	10	



Week	Hours	Subjects	Chapters in Textbook	Notes
3	2	Intermolecular Forces, Liquids and Solids: A molecular comparison of gases liquids and solids . Intermolecular Forces.	11	
4	2	Some Properties of Liquids Phase Changes. Vapor Pressure.	11	
5	2	Phase Diagrams. Structures of Solids , Bonding in Solid	11	
6	2	Properties of solutions: The Solution Process. Saturated Solutions and Solubility. First exam	13	
7	2	Factors Affecting Solubility. Ways of Expressing Concentration.	13	
8	2	Colligative Properties,. Non electrolytes Colloids.	13	
9	2	Chemical Kinetics: Factors that affect reaction rates. Reaction rates. The rate Law	14	
10	2	Concentration and Rate The Change of Concentration with Time.	14	
11	2	Temperature and Rate. Reaction Mechanisms. Catalysis	14	
12	2	Chemical Equilibrium: The Concept of Equilibrium. The Equilibrium Constant. Heterogeneous Equilibrium Second exam	15	
13	2	Calculating Equilibrium Constant. Applications of Equilibrium Constant .Le Chätelier's Principle	15	



Week	Hours	Subjects	Chapters in Textbook	Notes
14	2	Chemical Thermodynamics: Spontaneous Processes. Entropy and the Second Law of Thermodynamics.	19	
15	2	The Molecular interpretation of Entropy. Entropy changes in Chemical Reactions	19	
16	2	Gibb's free Energy. Free Energy and Temperature. Free Energy and the Equilibrium constant. Final exam	19	

Approved by Dept. Chair		Date of Approval	
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Extra Information: (Updated every semester and filled by course instructor)

Course Instructor	
Office No.	
Extension Email	
Office hours	