



كلية الصيدلة جامعة الزيتونة الأردنية
Faculty of Pharmacy
Al-Zaytoonah University of Jordan

" نحو تعليم صيدلاني متميز "
Toward Excellence in Pharmaceutical
Education

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Al-Zaytoonah University of Jordan
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Faculty of Pharmacy



" Tradition and Quality "

Detailed Course Description - Course Plan Development and Updating Procedures/ Pharmacy Department	QF02/0408-3.0E
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Faculty	Pharmacy	Department	Pharmacy
Course number	0120141	Course title	General Chemistry
Number of credit hours	3	Pre-requisite/co-requisite	-

Brief course description

This introductory course is aimed introducing students to basic chemistry concepts that they'll need in their study. Concepts include matter, measurement, stoichiometry, solutions, thermochemistry, atomic and electronic structures, and chemical bonding.

Course goals and learning outcomes	
Goal 1	Introduction to Basic Chemical Knowledge
Learning outcomes	1.1 Understanding of the basic structure of the atom, and how that structure relates to the chemical and physical properties of elements and their compounds. 1.2 Using the commonly encountered units of measurements in different calculations.
Goal 2	Realization of the Stoichiometric Relationships in Chemistry
Learning outcomes	2.1 Learning the basic calculations involved in predicting the amount of reagent needed for a reaction and the amount of product that can be obtained from reaction. 2.2 Recognizing solutes, solvents and solutions. 2.3 Having the basic knowledge concerning preparation, properties, reactions, and stoichiometric calculations involving solutions.
Goal 3	Introduction to Thermodynamics
Learning outcomes	3.1 Understanding the major types of chemical reactions and the thermal changes that accompany these reactions. 3.2 Calculating enthalpy changes during a reaction.
Goal 4	Comprehension of the Electronic Structure and Chemical Bonding
Learning outcomes	4.1 Understanding the major types of chemical bonding and how that relates to the structure of compounds, polarity and hybridization. 4.2 Writing electronic configuration for elements. 4.3 Relating electronic configuration of elements to their chemical reactivity. 4.4 Drawing Lewis structures.
Textbook	Chemistry, The Central Science, Brown, Lemay, Bursten and Murphy, Prentice Hall, 14 th Edition (2017).
Supplementary references	1. Chemistry: The Molecular Nature of Matter, James E. Brady, Neil D. Jespersen, Alison Hyslop, 7th Edition International Student Version, 2015. 2. Chemical Principles, The Quest for Insight, Peter Atkins (<i>Oxford University</i>), Loretta Jones (<i>University of Northern Colorado</i>), Leroy Laverman (<i>University of California, Santa Barbara</i>), Seventh Edition, 2016.



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3. Chemistry, by Raymond Chang., Kenneth Goldsby, 12 th edition , AP Student Edition, 2016.
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Course timeline				
Week	Number of hours	Course topics	Pages (textbook)	Notes
01	1	- Introduction	2 -16	
	1	- The study of chemistry.		
	1	- Classifications and Properties of Matter.		
02	1	- Units of measurement.	17-43	
	1	- Uncertainty in measurement.		
	1	- Dimensional analysis.		
03	1	-The atomic theory of matter.	44-54	
	1	-The discovery of atomic structure.		
	1	-The modern view of atomic structure and Atomic Weights.		
04	1	- The Periodic Table.	55-70	
	1	-Molecules and molecular compounds.		
	1	-Ions & Ionic compounds. -Naming Inorganic Compounds.		
05	1	-Chemical equations and patterns of chemical reactivity.	83-101	
	1	-Formula weights.		
	1	-Avogadro's number and the mole. -Empirical formulas from analyses.		
06	1	-Quantitative information from balanced equations.	102-125	
	1	-Limiting reactants.		
	1	- First Exam. Solution composition and general properties of aqueous solutions.		
07	1	-Precipitation reactions.	126-143	
	1	-Acids, bases and neutralization reactions.		
	1	-Oxidation reduction reactions.		
08	1	- Concentration of solutions	144-161	
	1	- Solution Stoichiometry and chemical analysis.	164-171	
	1	- Thermochemistry: The nature of chemical energy and the first law of thermodynamics..		
09	1	-Enthalpy and enthalpies of reaction	172-185	
	1	- Calorimetry.		
	1	- Hess's law.		
10	1	- Enthalpies of formation.	186-193	
	1	- Bond enthalpies.	214-218	
	1	-The wave nature of light, quantified energy and photons.		



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11	1	-Line spectra and the Bohr model.	219-235	
	1	-The wave behavior of matter, Quantum mechanics and atomic orbitals.		
	1	-Representation of orbitals and many electron atoms.		
12	1	- Electron configuration.	236-255	
	1	- Electron configuration and the periodic table		
	1	Second Exam. - Development of the periodic table, effective nuclear charge.	256- 261	
13	1	-Sizes of atoms and ions and ionization energy.	262-273	
	1	-Electron affinity.		
	1	-Lewis symbols and the octal rule.		
14	1	-Ionic bonding.	301-321	
	1	-Covalent bonding, bond polarity and electronegativity.		
	1	-Drawing Lewis structures and resonance structures		
15	1	-Exceptions to the octet rule, strengths and lengths of covalent bonds.	322-337	
	1	- Molecular Shapes, the VSEPR theory, polarity of molecules, and covalent bonding and orbital overlap		
	1	- Hybrid orbitals, multiple bond, and molecular orbitals.	338-367	
16	1	Final Exam.		

Theoretical course evaluation methods and weight	First exam 25% Second exam 25% Final exam 50%	Practical (clinical) course evaluation methods	Semester students' work = 50% (Reports, research, quizzes, etc.) Final exam = 50%
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Approved by head of department		Date of approval	
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Extra information (to be updated every semester by corresponding faculty member)

Name of teacher	M.Sc. Sawsan Shraim	Office Number	218
Phone number (extension)	315	Email	sawsan.shraim@zuj.edu.jo
Office hours			