



University of Petra		
Faculty of Art & Sciences		كلية الآداب والعلوم
Department of chemistry		قسم الكيمياء

### Course Syllabus

Year: 2019 / 2020

Semester: Second

Course No.	Course Title	Prerequisite	Co-requisite	Credit Hours <u>Lab.</u>	European Credit Transfer System (ECTS)
101108	Chemistry Laboratory for Medical Sciences.	None	101103	1	3

Instructor's Name	e-mail	Office No.	Office ext.	Office Hours
Ahmad daraosheh	adaraosheh@uop.edu.jo	7117	7117	Tue, Thurs: 12.00 – 13.30 Wed: 11.00 – 14.00

<b>Coordinator's Name:</b>	Ahmad Daraosheh
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<b>Short Course Description</b>	<p>This course involves safety laboratory rules, and introduction to laboratory equipments. Experiments for determination of density, empirical and molecular formula of compounds. Experiments involving stoichiometry, limiting reactants, and calorimetry. Volumetric analysis and quantitative analysis involving chemicals in every day life and chemicals, Chemical tests for some anions. This course is designed to augment General chemistry 101103.</p>
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#### Course Objectives

- To instill in students a sense of enthusiasm for practical general chemistry, an appreciation of its application in different contexts and to involve them in an intellectually stimulating and satisfying experience of learning and studying.
- To develop in students the ability to apply their chemical knowledge and skills to the solution of theoretical and practical problems in chemistry.
- To provide students with a knowledge and skills base from which they can proceed to further studies in specialized areas of chemistry or multi-disciplinary areas involving general chemistry.
- To generate in students an appreciation of the importance of general chemistry in an industrial, economic, environmental and social context.

#### Course Intended Learning Outcomes (ILOs) and their Alignment with Program ILOs, Teaching and Learning Methods, and Assessment Methods:

Upon successful completion of this course, students are expected to achieve the following learning outcomes:

Course ILOs	Program ILOs	Teaching and Learning Method	Assessment Method
<b>Knowledge (K)</b>			
Demonstrate knowledge and understanding of essential facts and perform experiments that are related to all experiments mentioned in the laboratory manual.	K1	Lectures & experimental	Reports, discussions, exams, and homework
<b>Intellectual Skills (I)</b>			
Estimate chemical data by performing calculations related to all experiments mentioned in the laboratory manual.	I2	Lectures & experimental	Reports, discussions, exams, and homework
<b>Practical skills (P)</b>			
Describe the nature and behavior of chemical compounds, their classification, chemical structure and reactivity.	P3	Lectures & experimental	Reports, discussions, exams, and homework
Use laboratory equipments, apply standard procedures safely.	P1	Lectures & experimental	Reports, discussions, exams, and homework
<b>Transferable Skills (T)</b>			
Communication skills, covering both written and oral communication.	T1	Lectures & experimental	Reports, discussions, exams, and homework

### Course Schedule:

Week	Topics	Topic Details	Course ILO number	Reference
1	- Laboratory instructions- safety Rules -Typical chemistry laboratory equipments	1. Explain the safety and laboratory rules which the student deals with. 2. Introduction to laboratory equipments.	P1& T1	Laboratory Manual
2	The density of solids and liquids	1. Determine the Density of Solids and Liquids 2. Uncertainty in Science.	K1, P3, P1, T1	
3	Chemical tests for some anions	Perform simple chemical tests to identify some of the common non-metallic ions.		
4	Chemicals in Everyday Life	Perform simple chemical tests to identify some household items.		
5	Empirical Formula of a Compound	Preparation of magnesium oxide, then determine the simplest formula of the compound.		
6	Molecular Weight of a Volatile Liquid	Determine the molar mass of a low boiling point liquid.		
7	Acid / Base Titration	1. Standardize a solution of NaOH. 2. Determine the unknown molarity of HCl.		
8	Vinegar Analysis	Determine the concentration of acetic acid in vinegar.		
9	Limiting Reactant	1. Precipitation of $Ba_3(PO_4)_2$ 2. Determination of the Limiting reactant.		
10	The Electrolytic Cell and Faraday's Laws	1. Electroanalysis of NaCl solution using Pt electrodes. 2. Faraday's laws and Avogadro's number.		
11	Molar solubility and $K_{sp}$	1. Molar solubility and $K_{sp}$ of $Ca(OH)_2$		

		2. Solubility of Ca(OH) <sub>2</sub> in presence of Ca <sup>2+</sup>		
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### **Assessment Methods and Grading System:**

Assessment method	Date	Grade	Comments
Midterm Exam		20	- All Exams are done on - line (electronic). - Every student should bring his own scientific calculator when entering the exam lab. Calculators are not allowed to be exchanged between students during exam. - Students are not allowed to carry their mobiles inside exam lab.
Reports		30	
Evaluation		10	
Final Exam		40	
<b>Total</b>		<b>100</b>	

### **Learning References:**

<b>1- Textbook (s):</b> General Chemistry Laboratory Manual For Medical sciences, by Bashir El-Essa, Lina Hanania, Layla Qaddoura and Maysaa Saleh, 2007, Bookshop.
<b>2- References:</b> General Chemistry Laboratory Manual , Prepared by: Richard E. Bleil, Ph.D. 2005
<b>3- Other Resources:</b> A lecture room with data show facility. <<Labs, computer resources, lecture rooms needed for the course>>

### **Course Policies<sup>1</sup>**

- Attendance Policy: University regulations apply to attendance.
- Academic Honesty: Academic dishonesty is an unacceptable mode of conduct, and will not be tolerated in any form at University of Petra. All persons involved in academic dishonesty and plagiarism in any form will be disciplined in accordance with University rules and regulations.

Approved by	Name	Date	Signature
Coordinator of Curriculum Committee	Dr. Abdel Menem Twaiq		
Faculty Dean/ Head of Department	Prof. Rami Abdel Raheem		

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<sup>1</sup> Additional information may be added in this section according to the nature of the course.