Course Plan for Bachelor Program - Study Plan Development and Updating Procedures/ Pharmacy Department	QF02/0408-4.0E

Study Plan No.	**2021/2022**		**University Specialization**		**Bachelor of Pharmacy**	
Course No.	**0201103**		**Course Name**		**General Chemistry Lab**	
Credit Hours	**1**		**Prerequisite *Co-requisite**		***General Chemistry**	
Course Type	☐ Mandatory University Requirement	☐ University Elective Requirement	☑ **Faculty Mandatory Requirement**	☐ Support course family requirements	☐ Mandatory Requirement	☐ Elective Requirement
Teaching Style	☐ Full Online Learning		☐ Blended Learning		☑ **Traditional Learning**	
Teaching Model	☐ 1 Synchronous: 1 Asynchronous		☐ 1 Face to Face: 1 Asynchronous		☑ **1 Traditional**	

Faculty Member and Study Divisions Information *(to be filled in each semester by the subject instructor)*

Name	Academic rank	Office No.	Phone No.	E-mail	
Office Hours (Days/Time)	**Sunday, Tuesday, Thursday ()**		**Monday, Wednesday ()**		
Division number	**Time**	**Place**	**Number of Students**	**Teaching Style**	**Approved Model**
				Traditional Learning	**1 Traditional**

Brief Description

This course covers the practical applications of the most important theoretical concepts covered in the General Chemistry course, such as qualitative and quantitative studies, stoichiometry, volumetric analysis, and thermochemical changes.

Learning Resources

Course Book Information (Title, author, date of issue, publisher ... etc)	Laboratory Manual for General Chemistry, Prepared by M. Sc. Sawsan Shraim, Al-Zaytoonah University of Jordan			
Supportive Learning Resources (Books, databases, periodicals, software, applications, others)	1. Chemistry in the Laboratory, James M. Postma (*California State University, Chico*), Julian L. Roberts (*University of Redlands*), Anne Roberts, 8th edition, 2017 2. Chemistry, The Central Science, Brown, Le May, Bursten Prentice Hall, 14th edition (2017). 3. Chemistry**,** by Raymond Chang, Kenneth Goldsby, 12th edition, AP student edition, 2016.			
Supporting Websites	-			
The Physical Environment for Teaching	☐ Class room	☑ **Labs**	☑ **Virtual Educational**	☐ Others

			Platform	
Necessary Equipment and Software	Moodle			
Supporting People with Special Needs	-			
For Technical Support	E-Learning & Open Educational Resources Center. Email: elearning@zuj.edu.jo; Phone: +962 6 429 1511 ext. 425/362.			

Course learning outcomes *(K= Knowledge, S= Skills, C= Competencies)*

No.	Course Learning Outcomes	The Associated Program Learning Output Code
Knowledge **The student should be able to:**		
K1	Recognize the proper basics of safe lab work.	**MK1**
K2	Outline standard laboratory procedures.	**MK1**
K3	Report observations and results.	**MK1**
Skills **The student should be able to:**		
S1	Perform lab procedures for experiments covered in this course and present the results.	**MS4**
S2	Interpret data and observations obtained from performed experiments.	**MS4**
S3	Use instruments, glassware and chemicals properly and safely.	**MS4**
S4	Manage the risks of chemical substances and procedures.	**MS4**
Competencies		
C1	Develop his/her professional and personal performance by continuously attending labs, submitting reports on time, and work effectively within groups.	**MC3**

Mechanisms for Direct Evaluation of Learning Outcomes

Type of Assessment / Learning Style	Fully Electronic Learning	Blended Learning	Traditional Learning (Theory Learning)	Traditional Learning (Practical Learning)
Midterm Exam	30%	30%	30%	**0%**
Participation / Practical Applications	0%	0%	20%	**50%**
Asynchronous Interactive Activities	20%	20%	0%	**0%**
Final Exam	50%	50%	50%	**50%**

Note 1: *Asynchronous interactive activities are activities, tasks, projects, assignments, research, studies, projects, and work within student groups ... etc, which the student carries out on his own, through the virtual platform without a direct encounter with the subject teacher.*

Note 2: *According to the Regulations of granting Master's degree at Al-Zaytoonah University of Jordan, 40% of final evaluation goes for the final exam, and 60% for the semester work (examinations, reports, research or any scientific activity assigned to the student).*

Schedule of Simultaneous / Face-to-Face Encounters and their Topics

Week	Subject	Learning Style*	Reference **
1	Introduction and Check-in		
2	Instructions and Lab. Equipment	Lecture, lab-based learning	Lab Manual Page 1
3	Measurements and Chemical Observation	Lecture, lab-based learning	Lab Manual Page 8
4	Stoichiometry-I	Lecture, lab-based learning	Lab Manual Page 12
5	Stoichiometry-II	Lecture, lab-based learning	Lab Manual Page 17
6	Limiting Reactant	Lecture, lab-based learning	Lab Manual Page 24
7	Determination of an Unknown		
8	Volumetric Analysis (I): Acid-Base Titrations	Lecture, lab-based learning	Lab Manual Page 31
9	Volumetric Analysis (II): Redox Titrations	Lecture, lab-based learning	Lab Manual Page 39
10	Chemical Equilibrium	Lecture, lab-based learning	Lab Manual Page 45
11	Thermochemistry [Determination of ΔH_f for MgO]	Lecture, lab-based learning	Lab Manual Page 50
12	Spectrophotometric Determination of the Solubility of $NiSO_4.6H_2O$	Lecture, lab-based learning	Lab Manual Page 57
13	Determination of an Unknown		
14	Check-out		
15	-		
16	Final Exam		

** Learning styles: Lecture, flipped learning, learning through projects, learning through problem solving, participatory learning ... etc.*
*** Reference: Pages in a book, database, recorded lecture, content on the e-learning platform, video, website ... etc.*

Schedule of Asynchronous Interactive Activities *(in the case of e-learning and blended learning)*

Week	Task / Activity	Reference	Expected Results
-	-	-	-