Course Syllabus
Faculty of Arts and Science

Academic Department Chemistry

Academic Year 2021/2022 Semester: Summer

Course Title :	General Chemistry Lab 1
Course No. :	1722101
Prerequisite :	-
Concurrent :	General Chemistry 1722100
Department :	Basic Science and Humanities/Scientific Subjects
Coordinator :	Dr. Waed Alahmad
Mode of Instruction	On Campus learning: 3 practical hours at-the lab.

*** Instructor:**

Lecturer	Office Phone	Room No.	Office Hours	E-mail
Dr. Waed Alahmad	1414	*221*	10-12 SMTW	*W_alahmad@asu.edu.jo*

Course Description

This course includes selected experiments to illustrate colligative properties, thermochemistry and thermodynamics, chemical kinetics, equilibrium constant, electrochemistry and phase equilibria.

Intended Learning Outcomes

Upon the completion of the course, this module should lead to the following learning outcomes:

A. Knowledge and Understanding (Student should):

A1 The general procedures for conducting various experiments.

A2 How to collect and organize experimental data.

A3 How to identify chemistry laboratory equipments.

B. Cognitive and Intellectual Skills (Student should):

B1 The important safety precautions that should be practiced in the lab.

B2 To recognize flammable, toxic, and harmful compounds.

B3 To practice the procedures for operating common laboratory equipment's.

C. Subject Specific Skills (Student should):

C1 To emphasize concepts of moles, molar ratio, empirical formula.

C2 To attain a depth of understanding of fundamentals and a reasonable competence in dealing with chemical problems.

C3 Collaborate effectively with other people in a team.

C4 Select appropriate techniques and procedures for chemical synthesis and analysis.

D. Transferable Skills (Student should):

D1 To test the topics covered, the emphasis on chemical calculations and the mathematical formulation of principles.

D2 Communicate effectively both orally and in writing with professionals and/or lay audience.

D3 Interpret data derived from laboratory observations and measurements in terms of their significance and the theory underlying them.

Program Learning Outcomes (PLOs):

1. Describe the fundamentals of chemistry including structure, reactivity and properties of chemical substances, different situation of reaction and the states of matter.

2. Construct essential facts, principles and theories across the four principal areas of chemistry, i.e. analytical, organic, inorganic and physical.

3. Align major issues currently at the frontiers of chemical research and development

4. Memorize certain knowledge in Arabic and English languages, computer science, Islamic religion

5. Outline the role of applied chemistry, which enables him to effectively use his/her information gained in all courses in different branches of chemistry State certain subjects that are academically and/or professionally related to chemistry (for those completing the BS.C. Chemistry degree that includes elective courses).

Course Learning Outcomes Alignment Matrix				
	CLO. 1	**CLO. 2**	**CLO. 3**	**CLO. 4**
PLO 1:	A_1	B_2	C_1	D_1
PLO 2:	A_2	B_3	C_3	D_3
PLO 3:	A_2	B_1	C_2	D_1
PLO 4:	A_3	B_3	C_1	D_2
PLO 5:	A_3	B_2	C_4	D_2

جامعة كل العرب

Course Contents and Schedule

Week	Day and Date	Topics to be covered	Method of instruction	CLOs	PLOs
1	Sun. 24/7 -Thur. 28/7 Sun. 31/7 -Thur. 4/8	Introduction Exp.1 Laboratory Safety and Laboratory Guidelines	In-class lecture	A_1,A_2,A_3,B_1, B_2,B_3,D_1	1,2,3,4,5,
				A_1, A_2, A_3, B_1, B_2, B_3, C_1, C_2, D_1	1,2,3,5
2	Sun. 28-3 Mon. 21-3 Wed. 23-3 Sun. 7/8 Thur. 11/8	Exp.2 Basic Laboratory Operation Exp.3: Measuring density	In-class lecture	A_2, A_3, B_3, C_1, C_2, D_1	1,2,3,5
				A_2,A_3,B_3,C_1, C_2,D_1	1,2,3,5
3	Sun. 14/8 Thur. 18/8	Exp.4: Avogadro's Number Exp.5: Determining the Empirical Formula of Magnesium Oxide	In-class lecture	A_2, A_3, B_3, C_1, C_2, D_1	1,2,3,5
				A_2, A_3, B_3, C_1, C_2, D_1	1,2,3,5
4	Sun. 21/8 Thur. 25/8	Exp.6 Limiting Reactant Exp.7: Molar Mass of Volatile Liquid	In-class lecture Assignment	A_2, A_3, B_3, C_1, C_2, D_1	1,2,3,5
				A_1, A_2, A_3, B_1, B_2, B_3, C_1, C_2, D_1	1,2,3,5
5	Sun. 28/8 Thur. 1/9	Exp.8 Determination of Rate law Exp.9:Exp.10: Le Chatelier´s Principle Calorimetry		A_2, A_3, B_3, C_1, C_2, D_1	1,2,3,5
				A_2,A_3,B_3,C_1, C_2,D_1	1,2,3,5
6	Mon.16-5 Wed 18-5 Mon.23-5 Wed.25-5	Exp.10: Calorimetry Exp.11: Thermodynamics	In-class lecture Assignment	A_2, A_3, B_3, C_1, C_2, D_1	1,2,3,5
				A_2, A_3, B_3, C_1, C_2, D_1	1,2,3,5
7	Sun. 4/9 Thur. 8/9	**Revision** **Final Exam**	In-class lecture Problem Solving	A_2, A_3, B_3, C_1, C_2, D_1	1,2,3,5
16.	**Final Exam**				

Grading Plan and Assessment Tools

Assessment Tools	Weights	Due date
Mid-term	30	
Assignments	-	
Quizzes	-	
Inter active lectures	-	
Group Work	-	
Presentation	-	
Reports	30	
Project	-	
Case-Study	-	
Final Exam	40	

Supplementary Reading

Textbook:

1- **Practical Manual prepared by Nawal Bahtiti 8th.ed.2021 Amman.**

2- **Laboratory Manual for principles of general chemistry, 5th ed., J.A. Beran, John Wiley Sons. 1994**

References:

1-Steven L. Murov Experiments in General Chemistry 5th.edition, Thomson. USA 2007

2-Chemistry, by Brady, Sense, & Jespersen, 5 E, J.W 2009.

Subject Coordinator	**Waed Alahmad**	**Signature:** 
Head of Curriculum Committee	**Hussam miqdad**	**Signature:** _____
Department Head	**Hussam miqdad**	**Signature:** _____
Faculty Dean	**Hadeel Alsaed**	**Signature:** ----------

Copy to:

- Department Head.
- Head of Curriculum Committee.
- Course File.