Course Syllabus
Faculty of Arts and Science
Basic Science and Humanities Department

Academic Year 2020 / 2021 Semester: First

Course Title :	General Chemistry lab 2
Course No. :	1722103
Prerequisite :	1501130
Concurrent :	1722103
Department :	Chemistry
Coordinator :	Dr. Dima Khater
Mode of Instruction	**On Campus** 3-hour in class

*** Instructor:**

Lecturer	Office Phone	Room No.	Office Hours	E-mail
Dr. Dima Khater	224	*1283*	S,M,T,W, Th: 11:00-12:00	*d_khater@asu.edu.jo*
Dr. Faten Al Adwan	222	1411	S, T, Th: -11-1 M,W: 11:30-12:30	f_aladwan@asu.edu.jo

Course Description

This course covers the following experiments: Laboratory Glassware and Equipment. Basic Laboratory Operation, Identification of Compounds, Qualitative Analysis of Cations and Anions, Acid-Base Titration, Vinegar Analysis, Redox Reaction, Determination of the Molar Mass of an Unknown Solid by Freezing Point Depression, Antacids analysis.

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 understand the general procedures for conducting some experiments knowing how to collect and organize experimental data with identifying chemistry laboratory equipment.

B. Cognitive and Intellectual Skills (Student should):

B1 practice the procedures for operating common laboratory equipment (e.g. Balances, Bunsen burner).

B2 practice important safety precautions.

B3 recognize flammable, toxic, and harmful compounds.

C. Subject Specific Skills (Student should):

C1 emphasize concepts of qualitative and quantitative analysis.

C2 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

D. Transferable Skills (Student should):

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

Program Learning Outcomes (PLOs):

1.1 Describe the fundamentals of chemistry including structure, reactivity, and properties of chemical substances, the different situations of reaction, and the states of matter

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

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

2.1 Differentiate between the different states of the matter, elements, and compounds based on the recognition and quantification of the properties

2.7 Calculate mathematically the output of different chemical reactions.

3.1 Demonstrate adequate life-long learning skills.

3.2 Collaborate effectively with other people in a team.

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

5.1 Assemble and use properly chemistry experimental setups.

5.2 Perform correctly quantitative measurements requiring accurate and precise manipulations.

Course Learning Outcomes Alignment Matrix								
	A1	**B1**	**B2**	**B3**	**C1**	**C2**	**C3**	**D1**
1.1	√							
1.2	√							
1.3		√						

2.1					√			
2.7								√
3.1			√	√				
3.2							√	
4.3						√		
5.1		√						
5.2								√

Course Contents and Schedule

Week	Day and Date	Topics to be covered	Method of instruction	CLOs	PLOs
1	Th. 10-3-2022	**Introduction**	In-class lecture	**A1**	**1.1 1.2**
2	Th. 17-3-2022	**Laboratory Safety and Guidelines**	In-class lecture	**B2, B3**	**1.3 3.1**
3	Th. 24-3-2022	**Basic Laboratory Operations**	In-class lecture	**B1, B3, B2**	**1.3 3.1**
4	Th. 31-3-2022	**Identification of a Compound, Physical Properties**	In-class lecture	**A1, B1, B2, C1, C2,C3, D1**	**1.1 1.2 1.3 2.1 3.2 5.2 2.7 4.3**
5	Th. 7-4-2022	**Formula of a Hydrate**	In-class lecture	**A1, B1, C1, C2 C3,**	**1.2 1.3 2.1 3.1 3.2 5.1 4.3**
6	Th. 14-4-2022	**Qualitative Analysis of Cations and Anions**	In-class lecture	**A1, B1, B2, C1, C2**	**1.1 1.2 1.3 2.1 4.3**
7	Th. 21-4-2022	**Acid-Base Titration**	In-class lecture	**A1, B1, C1 C2,C3, D1**	**1.1 1.2 1.3 2.1 2.7 3.2 5.2**
8.	Th. 28-4-2022	**Vinegar Analysis**	In-class lecture	**A1, B1, C1**	**1.1**

				C2,C3, D1	1.2 1.3 2.1 2.7 3.2 5.2
9	Th. 5-5-2022	**Official Holiday**			
10	Th. 12-5-2022	**Redox Reaction**	In-class lecture	A1, B1, B2, C1,C2	1.1 1.2 1.3 3.1 2.1 3.2
11	Th.19-5-2022	**Midterm**			
12	Th. 26-5-2022	**Determination of the Molar Mass of an Unknown Solid by Freezing Point Depression**	In-class lecture	A1, B1, B3 C2, C3, D1	1.1 1.2 1.3 2.1 4.3 3.2 2.7 5.2
13	Th. 2-6-2022	**Solubility Product for Calcium Hydroxide**	In-class lecture	A1, B1, C2,C3, D1	1.1 1.2 1.3 2.7 3.2 5.2
14	Th. 9-6-2022	**Thermodynamics: Enthalpy of dissociation Enthalpy of formation**	In-class lecture	A1, C1,C2, C3, D1	1.1 1.2 2.1 4.3 2.7 3.1 5.2
15	Th. 16-6-2022	**Practical final exam**	In-class lecture		
16.	**Final Exam**				

Grading Plan and Assessment Tools

Assessment Tools	Weights	Due date
Mid-term	30	TBA
Assignments	-	
Quizzes	-	
Inter active lectures	-	
Group Work	-	
Presentation	-	
Reports	20	TBA
Project	-	
Case-Study	-	
Final Exam	50	TBA

Supplementary Reading

Textbook:

1- LABORATORY MANUAL For Practical General Chemistry, 1501135

References:

1- Chemistry, Matter and Its Changes; By: Brady, Russell & Holum, 3E, J.W., 2000.

2- Chemistry, The Study of Matter and Its Changes by: Brady & Holum 2nd. E. 1996.

3- Chemistry, The Study of Matter and Its Changes by: Brady & Holum 2nd. E. 1996

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Subject Coordinator	**Dr. Dima Khater**	**Signature:** ----------
Head of Curriculum Committee	**Dr. Hussam Miqdad**	**Signature:** ----------
Department Head	**Dr. Hussam Miqdad**	**Signature:** ----------
Faculty Dean	**Dr. Hadeel Ali Saed**	**Signature:** ----------

Copy to:

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