جامعة الإسراء
ISRA UNIVERSITY

Course Syllabus

According to JORDAN National Qualification Framework (JNQF)

Course Name: General Chemistry 2

Course Number: 11011202

General Course Information:

Course title	General Chemistry 2
Course number	11011202
Credit hours	3
Education type	3 hours theoretical and 2 office hours per week
Prerequisites/corequisites	11011101
Academic Program	Bachelor
Program code	01
Faculty	Science
Department	Chemistry
Level of course	first year
Academic year /semester	2022/2023 First semester
Awarded qualification	Bachelor degree in chemistry
Other department(s) involved in teaching the course	N/A
Language of instruction	English
Date of production/revision	October 16, 2022

Course Coordinator:

Coordinator's name	Dr. Samer Al-Awaideh
Office No	Engineering Building
Office Phone extension number	307
Office Hours	11:00-12:00 Sunday, Tuesday, Thursday.
Email	samerawaudeh@yahoo.com

Other Instructors:

Instructor name	
Office No	
Office Phone extension number	
Office Hours	
Email	

Course Description *(English/Arabic)*:

English	Study theories and applications on Molecular and intermolecular forces, liquids and solids, physical properties of solutions, kinetic chemistry, chemical equilibrium, acids and bases, acid equilibrium: solubility base and equilibrium, energy relations in chemical reactions (Thermochemistry) and Thermodynamics.
Arabic	

Textbook: *Author(s), Title, Publisher, Edition, Year, Book website.*

1. Raymond Chang, **General Chemistry**: The Essential Concepts, McGraw-Hill, New York, 7th Edition, 2013.

References: ***Author(s), Title, Publisher, Edition, Year, Book website.***

1. T.L. Brown, H.E.Lemay, B.E.Bursten, C.J.Murphy, P.M.Woodward. Chemistry, 12th Ed., Prentic Hall., New York, NY, 2015.

Course Educational Objectives (CEOs):

1.	Demonstrates knowledge of the properties, importance, and reactivity of some common functional groups: alkanes, alkenes, alkynes, alkyl halides.
2.	Identify and name organic compounds, using the proper nomenclature.
3.	Draw structures (condensed and structural) of compounds.
4.	Understanding of organic chemical reactions and their mechanisms
5.	Demonstrate an understanding of chirality and stereochemistry.
6.	Demonstrate a knowledge nucleophilic elimination and substitution reactions

Intended Learning Outcomes (ILO's):

1.	Subject Intended learning outcomes (ILOs) describe what students are expected to know and be able to do at the end of the course. These outcomes are related to the knowledge, skill and competence that students acquire:	**Relationship to CEOs**	**Contribution to PLOs**	**Bloom Taxonomy Levels***	**Descriptors****
2. A	Knowledge and Understanding:				
3. A1	Studying the theories of all topics in the syllabus including solutions, equilibrium, kinetic, colligative properties, and electrochemical reactions.	4	1, 3	1,2	K
4. B	Intellectual skills:				
5. B1	Identify the characteristics of acids, bases, salts, solutions, electrochemical cells and study the equations of solutions, equilibrium, kinetic, colligative properties, and drawing electrochemical cells.	2, 3, 5	1,4	3	C
6. B2	Solve problems about solutions, equilibrium, kinetic, colligative properties, acids, bases and electrochemical reactions.	1, 4	3	1, 2	S

7. C	Subject specific skills:				
8. C1					
9. D	Transferable skills:				
10. D1					
11.					

***Bloom Taxonomy Levels**

Level #	1	2	3	4	5	6
Level Name	**Knowledge**	**Comprehension**	**Application**	**Analysis**	**Evaluation**	**Synthesis**

**** Descriptor (National Qualification Framework Descriptors): K : Knowledge, S: Skill, C: Competency.**

Program Learning Outcome (PLOs):

Program Learning Outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviours that students acquire as they progress through the program. A graduate of the (_____) program will demonstrate:		**Descriptors****		
		K	**S**	**C**
1.	Describe the fundamental scientific principles and theories across the four subfields of chemistry (Organic, inorganic, analytical and physical).	**K**		
2.	Identify and confirm chemical compounds structures as well as determine chemical composition.	**K**		
3.	Establish and concludes mechanisms of physical and chemical processes in addition to the ability of mastering qualitative and quantitative determination.			**C**
4.	Solve the scientific problems using different mechanisms and procedures based on critical thinking.		**S**	
5.	Conduct scientific experiments in chemistry.			**C**
6.	Commitment and interest in lifelong learning, and collaborate effectively with other people in a team.			**C**
7.	Prepare logical, organized and concise written reports, and oral and poster presentations that effectively communicate chemical content to other scientists.		**S**	
8.	Commitment to the ethical principles of chemical research.			**C**
9.	Find information about chemistry through databases and information		**S**	
10.	Evaluation of calculations in chemistry experiments and information analysis using computer software.			**C**
11.	Demonstrate safety laboratory techniques.		**S**	

**** Descriptors according to the national qualifications framework (K: knowledge, S: skill, C: Competency**

Weekly Schedule *(please choose the type of teaching)*

✓ Face to Face

Week	First Lecture (*Face to Face*)	Second Lecture (*Face to Face*)	Third Lecture (*Face to Face*)	Ach. ILOs	Ach. PLOs	Descriptors**
1-2	Chapter 6: Energy relationship in chemical reactions	Chapter 6: Energy relationship in chemical reactions	Chapter 6: Energy relationship in chemical reactions	A1, B1	1,3,4	K, S, C

2-3	**Chapter 12:** Intermolecular forces and liquids and solids,	**Chapter 12:** Intermolecular forces and liquids and solids,	**Chapter 12:** Intermolecular forces and liquids and solids,	A1, B1	1,3,4	K, S, C
4-5	**Chapter 13:** Physical properties of solutions sections:	**Chapter 13:** Physical properties of solutions sections:	**Chapter 13:** Physical properties of solutions sections:	B1	1,3,4	K, S, C
6	**chapter 14**: Chemical kinetics	**chapter 14**: Chemical kinetics	**chapter 14**: Chemical kinetics	B2	1,3,4	K, S, C
7-8	**Chapter 15:** Chemical equilibrium	**Chapter 15:** Chemical equilibrium	**Chapter 15:** Chemical equilibrium	B2	1,3,4	K, S, C
9-10	**Chapter 16:** Acids and bases	**Chapter 16:** Acids and bases	**Chapter 16:** Acids and bases	A1, B2	1,3,4	K, S, C
11	**Chapter 17:** Acid-Base Equilibria and Solubility Equilibria sections	**Chapter 17:** Acid-Base Equilibria and Solubility Equilibria sections	**Chapter 17:** Acid-Base Equilibria and Solubility Equilibria sections	A1, B1	1,3,4	K, S, C
12	**Chapter 18:** Thermodynamics	**Chapter 18:** Thermodynamics	**Chapter 18:** Thermodynamics	B2	1,3,4	K, S, C
13	**Chapter 19:** Redox Reactions and Electrochemistry	**Chapter 19:** Redox Reactions and Electrochemistry	**Chapter 19:** Redox Reactions and Electrochemistry	B2	1,3,4	K, S, C
15	Final Exam	**12.**				
		13.				

* **K: Knowledge, S: Skills, C: Competency**

Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- Interactive videos
- Practice Labs
- Discussion Forums
- Quizzes
- Other Interactive online activities
- Reports

Course Policies:

A- Attendance policies:

The maximum allowed absences is 15% of the lectures.

B- Absences from exams and handing in assignments on time:

Midterm exam can be retaken based on approval of excuse by the instructor's discretion.

Not handing assignment on time will incur penalties.

C- Academic Health and safety procedures

D- Honesty policy regarding cheating, plagiarism, and misbehaviour:

Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.

E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.
- Online Activities (Course Videos, Practice labs, Discussion Forums, Quizzes) **_20__%**
- Midterm **_30__%**
- Final Exam **__5__%**

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library.**

Required equipment:

- **PC / Laptop with webcam and mic**
- **Internet Connection**
- **Access to the IU E-Learning Platform at: https://elearn.iu.edu.jo/**
- **E-learning plan**
- Satisfaction questionnaires for online and face-to-face learning
- Software for e-learning
- Training

Assessment Tools implemented in the course:

√ Final Exam
√ Midterm Exam
√ Quizzes
√ Homework
- Practice Labs
- Discussion Forums
- Periodic reports for learning assessment
- Improvement plans for online or face-to-face teaching
- Others:…….
- Integrative Projects
- Writing Reports
- Illustrative presentations

Responsible Persons and their Signatures:

Course Coordinator	**Dr. Samer Al-Awaideh**	**Completed Date**	**16/10/2022**
		Signature	**Samer Al-Awaideh**

Received by (Department Head)	**Dr. Manal khabbas**	**Received Date**	**16 / 10 /2022**
		Signature