جامعة الإسراء
ISRA UNIVERSITY

Course Syllabus

According to JORDAN National Qualification Framework (JNQF)

Course Name: General Chemistry laboratory (1)

Course Number: 11011103

General Course Information:

Course title	General Chemistry laboratory (1)
Course number	11011103 أو متزامن
Credit hours	1 Credit hours
Education type	3 hours [Face-to-Face]
Prerequisites/corequisites	11011105
Academic Program	Bachelor
Program code	01
Faculty	Faculty of science
Department	Department of Chemistry
Level of course	1st year
Academic year /semester	first semester 2022/2023
Awarded qualification	BSc degree of chemistry
Other department(s) involved in teaching the course	Faculty of engineering
Language of instruction	English
Date of production/revision	2022/2023

Course Coordinator:

Coordinator's name	Ms. Dareen Hmedat
Office No	
Office Phone extension number	2635
Office Hours	
Email	dareen.hmedat@iu.edu.jo

Other Instructors:

Instructor name	
Office No	
Office Phone extension number	
Office Hours	
Email	

Course Description *(English/Arabic)*:

English	Laboratory safety, laboratory equipment's, qualitative analysis through experiments to detect some negative and positive ions in solutions, quantitative analysis through experiments to determine the density of solids and liquids, formula of hydrate compounds, the empirical formula of chemical compounds, Limiting reactant, and volumetric analysis, and the determination of molecular weight For volatile liquids
Arabic	تعليمات السلامة العامة والأدوات المخبرية; الطرق المخبرية و القياسات; التعرف على المركبات الكيميائية: الملاحظات الكيميائية; الصيغة الكيميائية للمركبات المائية; الصيغة الاولية للمركبات الكيميائية; العامل المحدد; تحضير المحاليل المائية وتخفيفها; التحليل الحجمي (I): معايرة الحموض و القواعد; التحليل الحجمي (II): معايرة الحموض و القواعد; الوزن الجزيئي لمادة سائلة متطايرة.

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

General Chemistry Laboratory (1) manual, Isra University 2018-2019

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

Required book (s), assigned reading and audio-visuals: 1.General chemistry The Essential Concepts, Raymond Change, fifth edition

Course Educational Objectives (CEOs):

1.	To enhance the theoretical knowledge a acquired in the general chemistry class (11011101) and to give the student the chance to apply what they have learned practically
2.	The lab will give the chance to the students to learn how to deal with laboratory components [chemicals, glassware's, equipment's and instruments]
3.	The student will learn how to obtain data accurately and to manipulate the data correctly to be able to prepare a good report
4.	Analyzed data to arrive at a scientific conclusion
5.	Able to design work both individually and as part of team

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	Student will be able to recognize fundamentals of chemistry by performing experiments	1	1	1	k
4. B	Intellectual skills:				
5. B1	Student will be able to analyze experiments data and presenting the results	2	2	4	s
6. C	Subject specific skills:				
7. C1	Student will be able to evaluate and manage the risks of chemical substances and dealing with laboratory tools by conduct standard laboratory procedures for determining (the presences of a particular compounds in aqueous solution , gravimetric method and volumetric method)	1,2,3,4	2,3	3	s

8. D	Transferable skills:				
9. D1	Student will be learn how to work individually and with partners effectively	5	7	3	c

***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 (Chemistry) program will demonstrate:		Descriptors**		
		K	S	C
1.	An ability to acquire and apply new knowledge as required across different fields of chemistry, using appropriate learning strategies.	✔		
2.	An ability to identify, formulate, and solve problems by applying principles and theories of chemistry, science and mathematics based on critical thinking.		✔	
3.	An ability to develop and conduct appropriate experimentation, analyze, interpret data, and draw conclusions.		✔	
4.	An ability to apply scientific principles and theories of chemistry to serve community in health, economic and environmental sectors.			✔
5.	An ability to communicate effectively with a wide range of audiences			✔
6.	An ability to recognize ethical and professional responsibilities in the field of chemistry, and make informed judgments that consider the impact of chemistry in global, economic, environmental and societal contexts.			✔
7.	An ability to function effectively as a part of a team, take on leadership positions, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives			✔

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

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

✔ **Face to Face**

☐ **Hybrid** *(**2 Lectures** Face – To - Face **+1 Lecture** Asynchronous)*

☐ **Hybrid (***1 Lectures* Face – To - Face ***+1 Lecture*** Asynchronous)

☐ **Online** *(**2 Lectures** Synchronous **+1 lecture Asynchronous**)*

Week	Three Hours (face- to -face)	Second Hour (……)	Third Hour (……)	Ach. ILOs	Ach. PLOs	Descriptors*

1	**Safety rules and Laboratory Apparatus**			C1	2,3	s
2	**Laboratory techniques and measurements**			A1 & B1 & C1 & D1	1,2,3, 7	s
3	**Identification of chemical compound: Chemical Observations**			A1 & B1 & C1 & D1	1,2,3, 7	s
4	**Separation of salts mixture**			A1 & B1 & C1 & D1	1,2,3, 7	s
5	Formula of a hydrated compound			A1 & B1 & C1 & D1	1,2,3, 7	s
6	Empirical formula of a chemical compound			A1 & B1 & C1 & D1	1,2,3, 7	s
7	Limiting reagent			A1 & B1 & C1 & D1	1,2,3, 7	s
8	Midterm Exam					
9	**Preparing aqueous solutions and making dilutions**			A1 & B1 & C1 & D1	1,2,3, 7	s
10	**Volumetric analysis (I): Acid – base titration (Standardization of sodium hydroxide solution)**			A1 & B1 & C1 & D1	1,2,3, 7	s
11	**Volumetric analysis (II): Acid – base titration (Molecular mass of unknown acid and vinegar analysis)**			A1 & B1 & C1 & D1	1,2,3, 7	s
12	**Determination of phosphoric acid in commercial acid**			A1 & B1 & C1 & D1	1,2,3, 7	s
13	**Molecular mass of Volatile liquid**			A1 & B1 & C1 & D1	1,2,3, 7	s
14	**Final Exam**					

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

Teaching Methods and Assignments:

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

- (3 hrs Face – To - Face)
- 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 **50%**

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

Responsible Persons and their Signatures:

Course Coordinator	M.Sc. Dareen Hmedat	**Completed Date**	**17/10/2022**
		Signature	Dareen Hmedat

Received by (Department Head)	**Dr. Manal Al Khabas**	**Received Date**	**17/10/2022**
		Signature