



Course Syllabus

1	Course title	Physical chemistry lab 2	
2	Course number	0303346	
3	Credit hours	2	
	Contact hours (theory, practical)	1, 3	
4	Prerequisites/corequisites	Physical chemistry 2 (0303341)	
5	Program title	BSc Chemistry	
6	Program code	0303	
7	Awarding institution	The University of Jordan	
8	School	Science	
9	Department	Chemistry	
10	Course level	3 rd year	
11	Year of study and semester (s)	First Semester, 2023/2024	
12	Other department (s) involved in teaching the course		
13	Main teaching language	English	
14	Delivery method	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online	
15	Online platforms(s)	<input type="checkbox"/> Moodle <input type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....	
16	Issuing/Revision Date		

17 Course Coordinator:

Name: Fadwa Odeh

Contact hours: Sun (10:30-12:00), Tue (11:00-12:30)

Wed (10:30-11:00)

Office number: Chem 108

Phone number: ext 22152

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**18 Other instructors:**

Name:

Office number:

Phone number:

Email:

Contact hours:

Name:

Office number:

Phone number:

Email:

Contact hours:

19 Course Description:

Selected experiments representing the following subjects in physical chemistry: Ionic activity; electrical conductivity; electrochemical properties; surface chemistry; electromagnetic spectra; chemical reactions kinetics and reaction rates



20 Course aims and outcomes:

A- Aims:

The lab work in this class of aims to

1. To reinforce the material the students have learned the physical chemistry 2 class (0303431) and to give the students the chance to apply what they have learned practically. In addition, the students will learn some new experimental techniques that are necessary for them to become an effective chemists
2. The lab will give the chance to the students to explore more deeply in some topics in physical chemistry and perhaps to cover some topics that have not been included in the physical chemistry 2 class
3. Furthermore, the student will learn how to write a lab report in a professional manner

B- Students Learning Outcomes (SLOs):

Upon successful completion of this course, students will be able to:

1. Recognize fundamentals of physical chemistry including chemical kinetics, surface chemistry, collide chemistry spectroscopy and electrochemistry
2. Explain the essential facts, principles and theories across the physical chemistry
3. Analyze and interpret experimental data, critically assess data in literature and extract useful results from it
4. Evaluate and manage the risks of chemical substances and laboratory procedures. Conduct standard laboratory procedures. Operate a range of instrumentation
5. learn how to work individually and with partners effectively
6. learn how to write a lab reports in a professional manner

SLOs SLOs of the course	SLO (1)	SLO (2)	SLO (3)	SLO (4)
1	✓	✓		
2	✓			
3	✓		✓	
4	✓			
5	✓			
6	✓		✓	

21. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
<p><i>In this lab the experiments are divided into two sets where five experiments are performed in each lab period and the students are circulated to finish the experiments.</i></p> <p><i>The two sets includes</i></p> <ul style="list-style-type: none"> • Experiment set 1: <ol style="list-style-type: none"> 1- Kinetics of the decomposition of benzene diazonium chloride 2- Kinetics of the hydroxyl ion - crystal violet reaction 3- Ionic strength and solubility 4- Viscosity of solutions 5- Potentiometric titration • Experiment set 2: <ol style="list-style-type: none"> 1- Adsorption from solution 2- Surface tension 3- Electrical conductance 4- Transference numbers and Hittorf method 5- Critical micelle concentration 6- Origen of colors (quantum chemistry, calculations) <p>After finishing the first set of experiments the students are given the midterm exam and the final exam is performed at the end of the semester. After doing each experiment students have to write a lab report handed in the next lab period</p>					

22 Evaluation Methods:

Opportunities to demonstrate achievement of the SLOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform
Mid term	20	Set 1	1-6	7 or 8	Written
quizzes	10	Set 1 and 2	1-6	Variable	Written



Final practical	10	Set 1 and 2	SLO 1, SLO 3 and SLO 5	After week 14	practical
Final written	30	Set 1 and 2		After week 15	Written
Reports	20	Set 1 and 2	SLO 1 to SLO 6	Every week	Written
Evaluation	10	Set 1 and 2	SLO 1 to SLO 6	Every week	Oral

23 Course Requirements

(e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):

24 Course Policies:

A- Attendance policies:

All students are expected to follow the rules at The University of Jordan. Unexcused absences exceeding 15% of the total number of class meetings (8 classes) will result in “ F ” grade

B- Absences from exams and submitting assignments on time:

Unexcused absence from a written exam will result a grade of zero

C- Health and safety procedures:

All students are expected to follow the safety rules of the lab work

D- Honesty policy regarding cheating, plagiarism, misbehavior:

- Cheating and plagiarism will result a grade of zero in that assignment. if this behavior is repeated, this case will be reported to the chairman of the department to apply the university regulation.
- Student how Misbehave in the lab will be asked to leave the lab, his grade in that work will be zero and the student will be considered absent

E- Grading policy:

Lab reports are given 20% of the total work

Midterm exam is given 20%

Quizzes 10 %

Evaluation is given 10%

Final exam is given 40% (practical 10% and written 30%)



F- Available university services that support achievement in the course:

- pH meters
- Conductivity meters
- Photometers
- Vacuum and pressure gauges

Etc...

25 References:

A- Required book(s), assigned reading and audio-visuals:

Experiment in physical chemistry, D.P. Shoemaker, C.W. Garland and J.W. Nibler, 5th edition.
Mc Graw Hill

B- Recommended books, materials, and media:

Any physical chemistry book

26 Additional information:

Name of Course Coordinator: Fadwa Odeh	Signature: <i>Fadwa</i>	Date: Fall2023/2024
Head of Curriculum Committee/Department: -----	Signature: -----	---
Head of Department: -----	Signature: -----	-
Head of Curriculum Committee/Faculty: -----	Signature: -----	-
Dean: -----	Signature: -----	