Course Syllabus

1	**Course title**	**Practical Analytical Chemistry**
2	**Course number**	**0303216**
3	**Credit hours**	1 Hour
	Contact hours (theory, practical)	(1,3)
4	**Prerequisites / corequisites**	0303102
5	**Program title**	Bachelor degree in chemistry
6	**Program code**	0303
7	**Awarding institution**	The University of Jordan
8	**School**	Science
9	**Department**	Chemistry
10	**Course level**	2nd year
11	**Year of study and semester (s)**	Fall, Spring and Summer
12	**Other department(s) involved in teaching the course**	N/A
13	**Main teaching language**	English
14	**Delivery method**	☒ Face to face learning ☐ Blended ☐ Fully online
15	**Online platforms(s)**	☒ Moodle ☐ Microsoft Teams ☐ Skype ☐Zoom ☐Others……
16	**Issuing/Revision Date**	March 2023

17 Course Coordinator:

Name: Mohammed Rasheed Contact hours: 11-12 T,T
Office number: Old Chemistry Building Phone number: 22176
Email: m.rasheed@ju.edu.jo

18 Other instructors:

Dr Safwan mohammad Fraihat
Ms Ruba Zalloum
Ms Manal AlWahsh
Ms Abeer Malhees

19 Course Description:

Practical analytical chemistry laboratory is an undergraduate practical course that covers the following analytical methods of analysis: calibration and statistical analysis, titration methods, gravimetric analysis, and separation science based on paper chromatography and ion-exchange chromatography.

20 Course aims and outcomes:

A- Aims:

Students will have hands on calibration and statistical analysis, titration methods, gravimetric analysis and separation science based on paper chromatography and ion-exchange chromatography in addition to this, they will develop skills like being a team player through working in couples in some experiments in groups and technical writing skills through report writing.

B- Course Learning Outcomes (CLOs): Upon successful completion of this course students will be able to:

Upon successful completion of this course students will be able to …
1- The knowledge of different types of laboratory glassware and balances
2- The skills of prepare standard solution from primary standard material to conduct standardization of different solutions
3- Apply the skills and critical thinking of using different titration methods and the gravimetric method of analysis
4- Using chromatographic technique (ion-exchange and paper) in separation and identifications of unknown compounds.
5- Able to write a scientific report, analyze and interpret experimental data through statistics.

PILO / CLO	PILO (1)	PILO (2)	PILO (3)	PILO (4)	PILO (5)	PILO (6)
1	X					
2		X			X	
3	X	X		X		X
4		X	X		X	X
5	X	X	X		X	

21. Topic Outline and Schedule:

Topic	Week	ILOs	Program SOs	ABET SOs	TLA (teaching, learning and Assessment)
1- Calibration of buret	One week	1, 5	a,b		Quizzes, oral evaluation and exams
2- The importance of sampling and statistical handling of data	One week	2,3,5	c,e,b		Quizzes, oral evaluation and exams
3- Titration: neutralization titrations, precipitation titrations, redox titrations and complexometric titration	6 week	2,3,5	c,e,b		Quizzes, oral evaluation and exams

5- Gravimetric determination of sulfate and nickel	2 week	2,3,5	c,e,b		Quizzes, oral evaluation and exams
6- Chromatography: ion exchange and paper chromatography	2 week	2,4	c,k		Quizzes, oral evaluation and exams

22 Evaluation Methods:

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

Evaluation Activity	Mark	Topic(s)	CLO	Period (Week)	Platform
Midterm exam	30	Topics covered in chapters 1+2+3+4	1+2+3+4	Week # 7	On campus computerized exam
Semester work exam	30	All topics	1-5	Weak1-Weak 10	
Final exam	40	All Chapters	1-5	Final exams week	On campus computerized exam

23 Course Requirements

N/A

24 Course Policies:

A- Attendance policies:

Regular attendance is essential for satisfactory completion of this course. Students must attend at least 10 of 12 experiments

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

Instructors must offer reasonable assistance in making up missed work (e.g., making arrangements for attendance at labs which meet at other times; providing makeup exams or labs where feasible) in case the student has reasonable excuse

C- Health and safety procedures:

While working in the laboratory, wear personal protective equipment - eye protection, gloves, laboratory coat - as directed by your supervisor.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

The policy is that the student must submit his/her own work. Students may not share his/her work with other students, unless it is allowed as group.

E- Grading policy + Weighting (i.e. weight assigned to exams as well as other student work)

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

G- Statement on Students with disabilities

Students with Disabilities: Students with disabilities who need special accommodations for this class are encouraged to meet with the instructor and/or their academic advisor as soon as possible. In order to receive accommodations for academic work in this course, students must inform the course instructor and/or their academic advisor, preferably in a written format, about their needs no later than the 4th week of classes.

25 References:

A- Required book (s), assigned reading and audio-visuals:
Practical analytical chemistry by prof. M.A. Alawi, prof. M. K. Hourani and prof M. K. Fayyad (2013)

B- Recommended books, materials, and media:
Fundamentals of analytical chemistry by Skoog, West, Holler and Crouch, 9th edition (2004)

26 Additional information:

Safety Procedures should be followed carefully in this lab.

Name of Course Coordinator: Dr. Mohammed Rasheed Signature: *M. Rasheed* Date:6/3/2022
Head of Curriculum Committee/Department: ---------- Signature: ----------
Head of Department: ---------- Signature:----------
Head of Curriculum Committee/Faculty: ---------- Signature: ----------
Dean: ---------- Signature: ----------