



## Course Syllabus

1	<b>Course title</b>	<b>Environmental Analytical Chemistry</b>	
2	<b>Course number</b>	<b>0333412</b>	
3	<b>Credit hours</b>	3	
	<b>Contact hours (theory, practical)</b>	Sat-Mon-Wed 1130-1230	
4	<b>Prerequisites/corequisites</b>	Chem 101	
5	<b>Program title</b>	Chemistry	
6	<b>Program code</b>	03	
7	<b>Awarding institution</b>		
8	<b>School</b>	Science	
9	<b>Department</b>	Chemistry	
10	<b>Course level</b>	4 <sup>th</sup> year	
11	<b>Year of study and semester (s)</b>	2019-2020	
12	<b>Other department (s) involved in teaching the course</b>	Geology, Biology, pharmacy	
13	<b>Main teaching language</b>	English	
14	<b>Delivery method</b>	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online	
15	<b>Online platforms(s)</b>	<input type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....	
16	<b>Issuing/Revision Date</b>	4-1-2024	

### 17 Course Coordinator:

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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:**

Environmental analytical chemistry (0303412) is an optional undergraduate chemistry course that covers certain areas in environmental chemistry which are within departmental policy. In this course students will learn about general terms and concepts related to environment, pollution, environmental pollutants, concepts and techniques of sampling (sample collection or portioning), sample preparation, and detecting, and measuring trace levels of typical environmental pollutants of concern. Data interpretation involved in environmental analysis.

## 20 Course aims and outcomes:

### A- Aims:

Understand different aspects of analytical methods used for different environmental: sampling, extraction, analysis and statistical treatment.

### B- Students Learning Outcomes (SLOs):

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

1-Describe sampling methods and applications

2-Comparing sampling methods and analysis

3-Evaluation of types of analysis of different types of pollutants

SLOs SLOs of the course	SLO (1)	SLO (2)	SLO (3)	SLO (4)
1 Learn different types of sampling methods and strategies concerning constituents of the environment				
2 Application of analytical chemistry concepts and methodology in different environmental sample analysis				
3				
4				
5				
6				

## 21. Topic Outline and Schedule:

Week	Lecture	Topic	Student Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	1.1	Introduction to Environmental data acquisition	1	Lectures (1 week)				
	1.2							
	1.3							
2	2.1							
	2.2							
	2.3							
Week	Lecture	Topic	Student Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
3	3.1	Basics in Environmental sampling	1	Lectures (2 weeks)				
	3.2							
	3.3							
4	4.1							
	4.2							
	4.3							
5	5.1							
	5.2							
	5.3							
6	6.1	Environmental sampling		Lecture (3 weeks)			<i>Interacting with students</i>	

		design and techniques					<i>in lecture in solving problems and examples</i>	
	6.2							
	6.3							
7	7.1							
	7.2							
	7.3							
8	8.1	Common operation and wet methods for analysis		Lectures (2 weeks)			Major Exam	
	8.2							
	8.3							
9	9.1							
	9.2							
	9.3							
10	10.1	Extractive methods and UV-VIS and AAS applications		Lectures (2 weeks)			Major Exam	
	10.2							
	10.3							
<b>Week</b>	<b>Lecture</b>	<b>Topic</b>	<b>Student Learning Outcome</b>	<b>Learning Methods (Face to Face/Blended/ Fully Online)</b>	<b>Platform</b>	<b>Synchronous / Asynchronous Lecturing</b>	<b>Evaluation Methods</b>	<b>Resources</b>
11	11.1							

	11.2							
	11.3							
12	12.1							
	12.2							
	12.3							
13	13.1							
	13.2							
	13.3							
14	14.1							
	14.2							
	14.3							
15	15.1							
	15.2							
	15.3							

## 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
	30 %		1		
	30 %		2		
	40%		1+2		

## 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:

B- Absences from exams and submitting assignments on time:

C- Health and safety procedures:

D- Honesty policy regarding cheating, plagiarism, misbehavior:

E- Grading policy:

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

#### **25 References:**

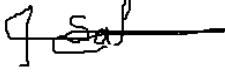
A- Required book(s), assigned reading and audio-visuals:

- Fundamentals of Environmental sampling and analysis, Zhang, 2007
- Environmental chemistry, 7th edition, by Stanley E. Manahan CRC Press, LLC Boca Raton, FL (2000)
- Standard Methods for the Examination of Water and Wastewater, 23rd Edition, Book by American Water Works Association/American Public Works Association/Water Environment Federation, 2017. Editors: E.W. Rice, R.B. Baird, A.D. Eaton
- Daniel Vallero .Fundamentals of Air Pollution (Fifth Edition)

B- Recommended books, materials, and media:

Fundamental analytical chemistry Skoog and west

#### **26 Additional information:**

Dr. Safwan Fraihat	Signature: 	-- Date: --10-1-2024-----
Head of Curriculum Committee/Department:	-----	Signature: -----
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Head of Department:	-----	Signature: -----
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Head of Curriculum Committee/Faculty:	-----	Signature: -----
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Dean:	-----	Signature: -----