

SULTAN QABOOS UNIVERSITY

COURSE OUTLINE

PROGRAM:Chemistry

1.	Course Code	СНЕМ6642				
2.	Course Title	Advanced Environmental Chemistry				
3.	Credits	3				
4.	Pre-requisite Course (s)	CHEM4442/CHEM4446				
5.	Co-requisite Course (s)					
6.	Equivalent Course (s)					
7.	Course Category (Specify either as Elective or Requirement and appropriate level: College, Department, etc.)	University Requirement	🗌 Un	University Elective		
		College Requirement	College Elective			
		Department Requirement	De De	partment Elective		
		Other (specify):				
8.	Course Owner	College: Science	Depart	ment: Chemistry		
9.	Course Type	Elective				
10. Language of Instruction		English				

11. Course Description

This course will lead to the understanding of the environmental and health damages caused by some pollutants. International and local strategies for pollution control will be covered. The course will emphasize the chemistry of air, water and soil and their interaction with the anthrosphere. Pollutants and toxic materials effects on the environment will be covered. Students are expected to read and summarize the recent literature on environmental topics. They will also develop critical thinking and problem solving skills by establishing their own opinion about the environment.

12. Teaching/Learning Strategies

Lectures (3 h)

13. Evaluation Methods

Final Examination 50%; Term Paper 10%; Assignments 10%, Midterm Test & Quizes 30% Test - Week 9.

Paper: Submission of term paper report week 13;

Presentations, week 13 and 14

14. Required Course Core Material

15. Matching Course Objectives with the Program Outcomes and with SQU Graduate Attributes

* <u>Click here</u> to view a list of action verbs use in developing objectives

SQU Graduate Attributes

A.	SQU graduates should be able to:	B.	SQU graduates possess	С	SOU graduates should
1.	apply the knowledge and skills	1.	interpersonal communication skills and alignment with culture of international	0.	relish good citizenship
2.	communicate effectively and use		labour market to assist them in practical		their national identity and
	technologies	2.	skills and motivation for independent		socially responsible, engage in community
3.	critically analyze complex information and present it in simple		learning and engagement in lifelong learning and research		affairs and mindful of
	legible manner	3.	work ethics and positive values, and eniov intellectual independence and		contemporary issues.
			autonomy		
		4.	teamwork skills and display potential		
			leadership qualities		

#	Course Learning Objective	Relevant Program Outcome(s)	Applicable Attribute(s)
1.	Describe and interprete environmental chemistry data using proper tools	PO1	A1, A2
2.	Distinguish and recognize different parts of the environment	PO1 & PO2	A1
3.	Describe and explain components of various analytical techniques	PO2 & PO6	A1
4.	Select a suitable analytical technique for solving real time problems	P03	A3 &B2
5.	Discuss the features of instruments used in chemical analysis.	PO1	A1
6.	Integrate chemical knowledge to interprete the environment and the policies adopted towards green practices	PO3, P07 & PO6	A3, A3, C
7.	Be able to practice the processes and procedures for creating and completing successful writing in environmental chemistry	P09, P011	A2, B1
8.	Be skilled in problems solving, critical thinking and independent life-long learner.	PO3	A3, B2
9.	Be a good team player in order to achieve common goals.	PO5	B4
10.	Be able to manage their time, meet deadlines and organize their work efficiently.	PO4	B3
11.			
12.			
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16. Student Responsibilities

It is the student's responsibility to know and comply with all University Academic Regulations relevant to participation in this course. These regulations specifically include the Attendance and Student Academic Misconduct policies.

For attendance, it is the student's responsibility to be punctual and to attend all classes.

Students are expected to perform their work with honesty and avoid any academic misconduct, which is defined as the use of

any dishonest or deceitful means to gain some academic advantage or benefit. This can take many forms, including but not limited to, the following: copying, plagiarism, collusion and forging documents. For full details please refer to the Undergraduate Academic Regulations and to the Student Academic Misconduct Policy. Additionally, this course requires that you:

COURSE INFORMATION								
Course Code		CHEM6642	Course Title		Advanced Environmental Chemistry			
Year/Semester		Fall 2023	Section		10		-	
Day, Ti	ime, and Place	MON(D6), WED(D	MON(D6), WED(D2) 12:00-1:20					
Course	Coordinator	Prof. F. O. Suliman						
Office Location		2056	Office Hours		By appointment			
Office Ext.		1480	Email fsuliman@squ.edu.om		l			
			Tenta	ative Sched	ule			
Week	Lecture/Topic			Ma	aterial to be Covered	Assignment /Exam	Weight (%)	
1	Chapter1		Environmental Chemistry:					
		(Chemical Fate and Transport				
2	Chapter 5			Phase interactions				
3	Chapter 7		Water p	ollution				
4	Chapter 8		Water treatment					
5	Chapter 9			Atmospheric chemistry				
6	Chapter 10	Particles in the atmosphere						
_	Chapter 11		Gaseous inorganic air					
1				pollutants				
8	Chapter 12			Organic air pollutants				
9	Chapter 23	Chapter 23 Toxicological Chemistry						
10								
11								
12								
13								
14								
15							1	

APPENDIX A: INSTRUCTORS OF MULIPLE SECTIONS							
Section	Instructor	Day, Time, and Location	Office Location and Extension	Email	Office Hours		
			1				

Program Learning Outcomes

PO1: demonstrate factual knowledge of chemistry

PO2: assimilate new information into existing knowledge

PO3: integrate knowledge in problem solving, critical thinking and analytical reasoning.

PO4: appraise time requirements for assigned tasks, and manage time appropriately PO5: work within a team

PO6: use modern instrumentation and techniques to conduct experiments following established procedures

PO7: use and dispose of chemicals safely following appropriate procedures and regulations PO8: employ efficient use of computers for data acquisition and analysis

PO9: use information sources to retrieve chemical information

PO10: formulate hypothesis, design and perform experiments

PO11: communicate chemical information to specialist and non-specialist audiences