SULTAN QABOOS UNIVERSITY

COURSE OUTLINE

PROGRAM: water technology

1. Course Code	3315	
2. Course Title	Water Quality	
3. Credits	3 CR, 12 CP, 6 ECTS	
4. Pre-requisite Course (s)	SWAE 2201, CHEM 2101	
5. Co-requisite Course (s)	None	
6. Equivalent Course (s)	None	
7. Course Category (*Specify either as* Elective *or* Requirement *and appropriate level: College, Department, etc.)*	☐ University Requirement	☐ University Elective
	☐ College Requirement	☐ College Elective
	☒ Department Requirement	☐ Department Elective
	☐ Other (specify):	
8. Course Owner	College: CAMS	Department:SWAE
9. Course Type	Lecture/Practical	
10. Language of Instruction	English	

11. Course Description

This course will provide students with basic knowledge about various aspects of water quality. This course addresses the physical, chemical and biological factors involved in water quality of natural and agricultural systems. Topics to be discussed are: Introduction to water quality, surface water quality, groundwater quality, impacts of agriculture on water quality, strategies for water quality assessment, sampling and analysis, and data handling and presentation. Students will also learn about water quality standards, pollutant sources and pathways, temporal and spatial variations of water quality and biological oxidation of organic matter.

12. Teaching/Learning Strategies

Apart from normal lectures field trips, videos and laboratory sessions are also part of this course. Students will have to do a group project based on what they learn in lectures and in the laboratory sessions. Group project outcomes have to be presented in oral sessions as well as through a written report. There will be 2 tests, 1 comprehensive final and 6 unannounced quizzes to assess student achievements.

13. Evaluation Methods

A	Exceptional performance
B	Very good performance
C	Satisfactory performance
D	Minimally acceptable performance
F	Unacceptable performance

2 Tests	30%
Quizzes (best 4 out of 6)	10%
Final	40%
Attendance	2%
Reports, Lab, Project work	18%

Total:	100%

14. Required Course Core Material

Textbook: Water Quality Assessments. Edited by D. Chapman, Second edition. 1996

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

* ***Click here** 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**	**C. SQU graduates should relish** good citizenship qualities, conscious of their national identity and socially responsible, engage in community affairs and mindful of contemporary issues.
1. apply the knowledge and skills relevant to the specialization 2. communicate effectively and use information and communication technologies 3. critically analyze complex information and present it in simple legible manner	1. interpersonal communication skills and alignment with culture of international labour market to assist them in practical life and in living successfully 2. skills and motivation for independent learning and engagement in lifelong learning and research 3. work ethics and positive values, and enjoy intellectual independence and autonomy 4. teamwork skills and display potential leadership qualities	

#	Course Learning Objective	Relevant Program Outcome(s)	Applicable Attribute(s)
1.	Describe the basic concepts in surface and groundwater quality related issues	• Work independently and in team environments at national and international levels. • Learn emerging technologies and implement them for personal and employer's success. • Contribute to the welfare of the society at regional and global levels. • Continue professional development and advanced learning throughout the career.	A1
2.	Determine suitability of water for agricultural and domestic	• Work independently and in team environments at national and international levels. • Learn emerging technologies and implement them for personal and employer's	A3

		success. • Contribute to the welfare of the society at regional and global levels. • Maintain the standards of health, safety, environment and professional ethics at work and society. • Continue professional development and advanced learning throughout the career.international levels.	
3.	Analyze and interpret water quality data	• Work independently and in team environments at national and international levels. • Maintain the standards of health, safety, environment and professional ethics at work and society. • Continue professional development and advanced learning throughout the career.	A1, A3
4.	Design water quality assessment programs	• Work independently and in team environments at national and international levels. • Contribute to the welfare of the society at regional and global levels.	A2, A3
5.	Able to test water samples for common water quality parameters	• Work independently and in team environments at national and international levels. • Learn emerging technologies and implement them for personal and employer's	A1,A2,A3

		success. • Maintain the standards of health, safety, environment and professional ethics at work and society.	
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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:

Students should be aware of and abide by all University Regulations.

In the laboratory students must wear safety clothing

COURSE INFORMATION			
Course Code	3315	**Course Title**	Water Quality
Year/Semester	Spring	**Section**	10
Day, Time, and Place			

Course Coordinator	Mushtaque Ahmed		
Office Location	Room 217	**Office Hours**	8:00 AM to 4:00 PM
Office Ext.	1245	**Email**	ahmedm@squ.edu.om

Tentative Schedule

Week	Lecture/Topic	Material to be Covered	Assignment /Exam	Weight (%)
1	Lect 1 Characteristics of water bodies, Definitions Lect 2 Water uses and human impact on water quality			
2	Lect 3 Pollutant sources and pathways Lect 4 Classification of pollutants			
3	Lect 5 Indicators of water quality Lect 6 The natural quality of water			
4	Lect 7 Water quality and health Lect 8 Water quality standards			
5	Lect 9 Basics of water purification Lect 10 Introduction, hydrologic characteristics of rivers			
6	Lect 11 Chemical characteristics		Test 1	15%
7	Lect 12 Biological characteristics Lect 13 Major water quality issues in rivers			
8	Lect 14 Introduction to groundwater hydrology Lect 15 Sources of salinity, measures of water quality			
9	Lect 16 Causes of groundwater pollution Lect 17 Causes of groundwater pollution Lect 18 Groundwater sampling			

10	Lect 19 The water quality assessment process Lect 20 Categories of water quality assessment			
11	Lect 21 Design of assessment program Lect 22 Basic rules for a successful assessment			
12	Lect 23 Agricultural wastes Lect 24 Fertilizers and Nitrogen cycle Lect 25 Pesticides and water quality			
13	Lect 26 Eroded soil as pollutant Lect 27 Integrated approach to management of agricultural impact on water quality		Test 2	15%
14	Lect 30 Introduction, approaches to data storage Lect 31 Basic statistics			
15	Lect 32 Basic statistics & Review	Statistical Design and Tests		

APPENDIX A: INSTRUCTORS OF MULIPLE SECTIONS

Section	Instructor	Day, Time, and Location	Office Location and Extension	Email	Office Hours

APPENDIX B: ADDITIONAL INFOMARION

Water Technology Program Outcomes

- Work independently and in team environments at national and international levels.
- Learn emerging technologies and implement them for personal and employer's success.
- Contribute to the welfare of the society at regional and global levels.
- Maintain the standards of health, safety, environment and professional ethics at work and society.
- Continue professional development and advanced learning throughout the career.