	SULTAN QABOOS UNIVERSITY **COLLEGE OF SCIENCE** **BACHELOR OF SCIENCE IN CHEMISTRY** **COURSE OUTLINE**	

I. COURSE INFORMATION			
COURSE CODE	CHEM1200		
COURSE TITLE	**CHEMISTRY FOR A BETTER LIFE**		
OMAN QUALIFICATION FRAMEWORK (OQF) LEVEL	**5**		
CREDIT HOURS	2		
CONTACT HOURS	2		
PRE-REQUISITES			
CO-REQUISITES			
EQUIVALENT COURSES			
INCOMPATIBLE COURSES			
COURSE CATEGORY	☐ University Requirement	☒ University Elective	
	☐ College Requirement	☐ College Elective	
	☐ Department Requirement	☐ Department Elective	
	☐ Specialization Requirement	☐ Specialization Elective	
	☐ Other (specify): Major Requirement		
COURSE OWNER	College: Science	Department: Chemistry	
	Center:	Unit:	
DELIVERY MODE	☐ Face to Face	☐ Blended	☒ Online
COURSE TYPE	☒ Lecture	☐ Lecture//Lab	
	☐ Lecture/Seminar	☐ Lecture/Studio	
	☐ Lecture /Tutorial	☐ Lecture/Lab/Tutorial or Seminar	
	☐ Tutorial	☐ Laboratory (Practical)	
	☐ Field or Work Placement	☐ Studio	

	☐ Seminar	☐ Internship
	☐ Workshop	☐ Project
	☐ Thesis	☐ Other (specify):
LANGUAGE OF INSTRUCTION	Arabic	
COURSE DESCRIPTION	This course aims to teach students how chemistry can improve their daily lives. It also focuses on correcting and clarifying many concepts that are currently not properly understood. No previous knowledge of chemistry is necessary. Various topics are covered, among them; barbecue side effects; mineral water bottles and plastic types; ingredients in shampoo; anti-oxidants in tea, coffee, and chocolate; how bad are soda drinks, cigarettes and shisha; kitchen chemistry of fish, eggs, onions and microwave ovens; daily pollutants; and herbal medicines	
TEACHING AND LEARNING STRATEGIES	☐ Augmented Reality	☐ Flipped Classroom
	☒Blended Learning	☐Problem-Based Learning
	☐ Discovery-Based Learning	☐ Project-Based Learning
	☐ Student-Led Learning	☐ Team-Based Learning
	☐ Work-Based Learning	☐ Other (specify):

ASSESSMENT COMPONENT AND WEIGHT	☒ In-term exams (s) (50%)	☐ Quizzes (%)	☐ Other (specify): (%)
	☐ Homework (5%)	☐ Project (%)	
	☒Final examination (50%)	☐ Practical/ Lab (%)	

TEXTBOOKS AND EDUCATIONAL MATERIAL	Lecture notes, presentations available through Moodle.		
GRADING METHOD	☒ A-F Scale	☐ Pass/Not Pass	☐ Other (specify):

GRADING METHOD DESCRIPTION

	Range	Letter Grade	Description
A-F GRADING SCALE:	>90	A	**Exceptional performance:** All course objectives achieved and met in a consistently outstanding manner.
	86-90	A-	
	81-86	B+	**Very Good Performance:** The majority of the course objectives achieved (majority being at least two-thirds) and met in a consistently thorough manner.
	77-81	B	
	73-77	B-	
	68-73	C+	

	64-68	C	**Satisfactory Performance:** At least most of course objectives have been achieved and met satisfactorily
	60-64	C-	
	55-60	D+	**Minimally Acceptable Performance:** The course objectives met at a minimally acceptable level.
	50-55	D	
	<50	F	**Unacceptable performance:** The course objectives not met at a minimally acceptable level.
PASS/NOT PASS:			
OTHER:			

II. SEMESTER INFORMATION			
SEMESTER/YEAR	Fall 24	**SECTION(S)**	One
DAY AND TIME	Online	**VENUE(S)**	Online
COURSE COORDINATOR	Sultan Al Saadi	**COURSE TEAM**	The Coordinator
COORDINATOR OFFICE		**OFFICE HOURS**	Monday/Wednesday 10:00-11:00
COORDINATOR EXTENSION	2347	**COORDINATOR EMAIL**	Oman55@squ.edu.om

III. ALIGNMENT OF COURSE LEARNING OUTCOMES (CLO), PROGRAM LEARNING OUTCOMES (PLO), GRADUATE ATTRIBUTES (GA), AND OMAN QUALIFICATION FRAMEWORK (OQF) CHARACTERISTICS			
CLO	**PLO**	**SQU GA**	**OQF CHARACTERISTICS (LEVEL)**
1. Demonstrate ability to perform simple chemical calculations and describe structure of periodic table	**1** **2**	**A** **B**	**1(5))**
2. Discuss the potential effects of chemical adulterants in consumer products	**1** **2**	**A** **E**	**1(5)** **2(5)** **3(5)**
3. Associate chemical properties of materials with their role in consumer products	**5**	**B** **E**	**1(5)** **2(5)**

4. Associate potential health hazards and benefits of everyday substances and activities based on their chemical content	**1** **2**	**B** **E** **F**	**2(5)** **3(5)**
5. Describe using chemical processes common forms of metal corrosion and means of prevention	**1** **2**	**B** **E** **F**	**2(5)** **3(5)**
6. Recognize the crucial role of quality control laboratories.	**1** **2**	**B** **E** **F**	**2(5)** **3(5)**
7.			
8.			

IV. COURSE LEARNING OUTCOMES (CLOS) AND ASSESSMENT CRITERIA AND METHODS (FOR EACH CLO)		
CLO1: Demonstrate ability to perform simple chemical calculations and describe structure of periodic table		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Demonstrate ability to perform simple chemical calculations.	Mid Term exam, Final Exam
B)	Describe structure of periodic table	Mid Term exam, Final Exam
C)	Predict physical and chemical properties of elements from their position in the periodic table	Mid Term exam, Final Exam
CLO2: Discuss the potential effects of chemical adulterants in consumer products		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Identify reasons undesirable chemicals maybe added to consumer products	Mid Term exam, Final Exam
B)	Identify instances where wide-spread use of harmful adulterants have occurred	Mid Term exam, Final Exam
C)		
CLO3: Associate chemical properties of materials with their role in consumer products		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Recognize chemical content of some consumer products	Mid Term exam, Final Exam
B)	Associate the chemical properties of materials with their role in consumer products	Mid Term exam, Final Exam

C)		
CLO4: Associate potential health hazards and benefits of everyday substances and activities based on their chemical content		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Recognize products and activities that can led to undesirable chemical exposure	Mid Term exam Final Exam
B)	Evaluate hazards associated with some activities from a chemical prospective	Mid Term exam Final Exam
C)		
CLO5: Describe using chemical processes common forms of metal corrosion and means of prevention		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Identify using chemical processes leading to metal corrosion	Final Exam
B)	Match the effectiveness of corrosion prevention methods with corrosion type	Final Exam
C)		
CLO6: Recognize the crucial role of quality control laboratories		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Recognize the role of quality control laboratories	
B)	Evaluate the effectiveness of quality control measures	
C)		

V. COURSE CONTENT AND SCHEDULE

WEEK	LECTURES #	TOPICS/ SUBJECTS	READINGS/ CHAPTERS	REMARKS (e.g., ASSESSMENTS)
1	1	Introduction	Course outline	
2	2	Periodic Table, chemical calculations. Water, the molecule of life.	Presentation slides	
3	3	Melamine in kid's milk. Lead in cosmetics	Presentation slides	

4	4	Shampoo composition. Nanotechnology. Self-cleaning materials	Presentation slides	
5	5	Mineral water. Plastics. Alcohol & Hand sanitizer. Composition of perfumes	Presentation slides	
6	6			MidSemester Test 1
7	7	Caffeine free products. Green and red tea. Soda Beverages	Presentation slides	
8	8	Coking in microwave. Barbeque free from toxin. Chemistry of chocolates.	Presentation slides	
9	9	Cigarettes and Shisha. Everyday Exposure to Toxic Pollutants. Composition of air refresher	Presentation slides	
10	10			MidSemester Test 2
11	11	Natural products and herbal medicines	Presentation slides	
12	12	Corrosion of Metals	Presentation slides	
13	13	Quality control laboratory	Presentation slides	
14	14	Review	Presentation slides	
15	15			Final Exam
16				

VI. Additional Information (e.g., Rubrics, etc.)

VII. Students 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 attendance requirements and

student academic code of conduct.	
ACADEMIC INTEGRITY	The University expects the students to approach their academic endeavors with the highest academic integrity. Please refer to the **Undergraduate Academic Regulations**.
ADD AND DROP	Students who wish to drop or add the course should review the **Undergraduate Academic Regulations**.
ATTENDANCE	Sultan Qaboos University has a clear requirement for students to attend courses, detailed in the **Undergraduate Academic Regulations**.
ASSESSMENT AND GRADING	To ensure the provision of a sound and fair assessment and grading, please review the **Undergraduate Academic Regulations**.
GRADE APPEAL	Students who wish to appeal their grades should review the **Undergraduate Academic Regulations**.
CLASSROOM POLICIES	Students are expected to dress professionally during class time as required by the University. Use of phones or any other electronic devices in the classroom during class time is strictly prohibited. Unauthorized use may lead to faculty member confiscation of the device for the remainder of the class. Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. A student responsible for disruptive behavior may be required to leave the class.
LATE AND MAKE-UP WORK	Students are required to meet the course objectives by submitting coursework no later than the assigned due date. Students may be allowed to submit late work if approved by the course coordinator. Assignments submitted after the due date may be penalized.
MISSED EVALUATIONS	All quizzes, tests, clinical evaluations, and exams must be completed by the date they are assigned. If a quiz, test, or exam is missed due to a documented emergency situation (e.g., medical emergency, death in the immediate family), it is the student's responsibility to contact the instructor. Make-up exams will not be given for assessment criteria less than 25% of the course grade, but marks will be normalized over the other assessment components for students with valid proof of emergency situation (e.g. medical sick leave)
OTHER	

Course Outline Appendix

1. PROGRAM LEARNING OUTCOMES

1. Demonstrate factual knowledge of chemistry
2. Assimilate new information into existing knowledge
3. Integrate knowledge in problem-solving, critical thinking, and analytical reasoning.
4. Appraise time requirements for assigned tasks, and manage time appropriately
5. Work within a team
6. Use modern instrumentation and techniques to conduct experiments following established procedures
7. Use and dispose of chemicals safely following appropriate procedures and regulations
8. Employ efficient use of computers for data acquisition and analysis
9. Use information sources to retrieve chemical information
10. Formulate hypothesis, design, and perform experiments
11. Communicate chemical information to specialist and non-specialist audience

2. SQU Graduate Attributes and Competencies for Undergraduate Studies

GRADUATE ATTRIBUTES	GRADUATE COMPETENCIES FOR UNDERGRADUATE STUDIES
A. Cognitive Capabilities: The graduate has sufficient general and specialized theoretical knowledge that enables him/her to deal well with his/her specialty and other related fields.	1. Demonstrates familiarity and works with advanced specialized knowledge in the area of specialization.
	2. Demonstrates a general understanding of the relationship of advanced specialized knowledge with knowledge in other relevant professional fields and aspects.
	3. Demonstrates a comprehensive understanding of the theories, principles, and methods used in his/her specialty, and how to create and apply new knowledge.
	4. Demonstrates general knowledge of the legal environment and necessary relevant regulatory

	frameworks.
	5. Shows awareness of contemporary literature and research.
B. Skill and Professional Capability: The graduate has sufficient skill and practical experience that enables him/her to perform all tasks related to the specialization and other related fields.	1. Applies concepts, theories, and investigative methods to synthesize and interpret information to evaluate conclusions.
	2. Applies appropriate research methods and techniques and employs digital knowledge
	3. Evaluates and critiques information independently
	4. Uses cognitive and technical skills to analyze complex issues and develop appropriate solutions.
	5. Initiates new ideas or processes in the professional, educational or research context.
C. Effective Communication: The graduate has the ability to communicate effectively with others to achieve the desired results	1. Explains, presents, and adapts information to suit the recipients.
	2. Employs appropriate information and communication technology to collect and analyze information.
D. Autonomy and Leadership: The graduate has the ability to lead, make decisions and take responsibility for decisions.	1. Performs advanced professional activities independently.
	2. Demonstrates leadership skills.
	3. Takes professional responsibility.
	4. Assumes full accountability for the tasks and their output.
E. Responsibility and Commitment: The graduate appreciates the importance of available resources and deals with them effectively and is committed to the ethics of the profession and society.	1. Manages time and other resources assigned to accomplishing tasks effectively and responsibly.
	2. Demonstrates effective practices when working in teams.
	3. Demonstrates advanced levels of understanding of values and ethics relevant to the specialization, profession and local and international society and

	promotes them among others.
	4. Works within the professional, institutional, and specialization guiding frameworks and strategic plans.
	5. Interacts with community affairs positively and preserves national identity.
F. Development and Innovation: The graduate has a passion for development and innovation in the field of specialization.	1. Demonstrates the ability to independently manage learning tasks, with an awareness of how to develop and apply new knowledge.
	2. Utilizes specialized knowledge and skills for entrepreneurship.
	3. Utilizes creative and innovative skills in the field of specialization.

3. OQF Characteristics

1. Knowledge
2. Skills
3. Communication, Numeracy, and Information and Communication Technology Skills.
4. Autonomy and Responsibility
5. Employability and Values
6. Learning to learn