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

I. COURSE INFORMATION			
COURSE CODE	CHEM1300		
COURSE TITLE	**INTRODUCTION TO HEALTH, SAFETY, AND ENVIRONMENT PRACTICES**		
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	English	
COURSE DESCRIPTION	This course is a university elective that provides basic information in health, safety and environment. The course covers the HSE management, types of hazards that include chemical, biological and radiation hazards. Hazard identification using the international signage system will be provided. In addition, fire safety, toxicology, ergonomics, waste management and methods of protection in addition to principles of green chemistry	
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 5% Participation to meetings
	☐ Homework (5%)	☐ Project (%)	
	☒Final examination (45%)	☐ 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	

	60-64	C-	**Satisfactory Performance:** At least most of course objectives have been achieved and met satisfactorily
	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	Spring 25	**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. Define hazard, incident and safety and identify health hazards in the work and domestic environment	**1** **2**	**A** **B**	**1(5))**
2. Define toxic substance and toxicological effects of hazard materials and identify poisoning agents, in a workplace and domestic areas	**1** **2**	**A** **E**	**1(5)** **2(5)** **3(5)**
3. List potential fire sources and explain how to put out various types of fires	**5**	**B** **E**	**1(5)** **2(5)**
4. Identify hazards of the health and environment and describe personal protective equipment and when must be used	**1** **2**	**B** **E** **F**	**2(5)** **3(5)**

5. Identify basic safety rules, including the use of PPE, correctly in a chemical laboratory and state various types of waste and explain how to dispose them	**1** **2**	**B** **E** **F**	**2(5)** **3(5)**
6.			
7.			
8.			

IV. COURSE LEARNING OUTCOMES (CLOS) AND ASSESSMENT CRITERIA AND METHODS (FOR EACH CLO)		
CLO1: Define hazard, incident and safety and identify health hazards in the work and domestic environment		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Define and distinguish between hazard, incident and safety.	Mid Term exam, Final Exam
B)	Identify human health hazards in the work place	Mid Term exam, Final Exam
C)	Identify human health hazards in domestic environments	Mid Term exam, Final Exam
CLO2: Define toxic substance and toxicological effects of hazard materials and identify poisoning agents, in a workplace and domestic areas		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Define toxic substance and toxicological effects of hazard materials	Mid Term exam, Final Exam
B)	Identify poisoning agents, in a workplace and domestic areas	Mid Term exam, Final Exam
C)		
CLO3: List potential fire sources and explain how to put out various types of fires		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	List potential fire sources	Mid Term exam, Final Exam
B)	Describe methods used how to put out various types of fires	Mid Term exam, Final Exam
C)	Identify fire extinguisher type by physical description	Mid Term exam, Final Exam
CLO4: Identify hazards of the health and environment and describe personal protective equipment and when must be used		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE		**ASSESSMENT METHODS**

STUDENT MUST)		
A)	Identify hazards to the environment	Mid Term exam Final Exam
B)	Match personal protective equipment suitability to hazard type	Mid Term exam Final Exam
C)	Describe limitations of personal protective equipment	Mid Term exam Final Exam
CLO5: Identify basic safety rules, including the use of PPE, correctly in a chemical laboratory and state various types of waste and explain how to dispose them		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Identify basic safety rules, including the use of PPE, correctly in a chemical laboratory	Final Exam
B)	Describe common waste streams in laboratories of various types	Final Exam
C)	Describe correct disposal of common laboratory waste types	Final Exam
CLO6:		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)		
B)		
C)		

V. COURSE CONTENT AND SCHEDULE				
WEEK	**LECTURES #**	**TOPICS/ SUBJECTS**	**READINGS/ CHAPTERS**	**REMARKS (e.g., ASSESSMENTS)**
1	1	Introduction	Course outline	
2	2	Chapter 1-Introduction to Health, Safety and Environment	Presentation slides	
3	3	Chapter 2- Health Hazards	Presentation slides	
4	4	Chapter 3-Toxicology and Toxic substances	Presentation slides	
5	5	Chapter 4- Domestic poisons	Presentation slides	

6	6			MidSemester Test 1
7	7	Chapter 5-Fire triangle and fire fighting	Presentation slides	
8	8	Chapter 6-Biohazards and Radioactive	Presentation slides	
9	9	Chapter 7- Flood and Transport Safety	Presentation slides	
10	10			MidSemester Test 2
11	11	Chapter 8- The Basics of Personal Protective Equipment (PPE)	Presentation slides	
12	12	Chapter 9- Lab safety rules	Presentation slides	
13	13	Chapter 10 Waste management	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