

**SULTAN QABOOS UNIVERSITY****COURSE OUTLINE****PROGRAM:** chemistry

1. Course Code	CHEM 3324	
2. Course Title	Organic Chemistry	
3. Credits	4	
4. Pre-requisite Course (s)	CHEM 2101 or CHEM 1071	
5. Co-requisite Course (s)		
6. Equivalent Course (s)		
7. Course Category (Specify either as Elective or Requirement and appropriate level: College, Department, etc.)	<input type="checkbox"/> University Requirement	<input type="checkbox"/> University Elective
	<input type="checkbox"/> College Requirement	<input type="checkbox"/> College Elective
	<input type="checkbox"/> Department Requirement	<input type="checkbox"/> Department Elective
	<input checked="" type="checkbox"/> Other (specify):	
8. Course Owner	College: Science	Department: Chemistry
9. Course Type	Lecture/lab	
10. Language of Instruction	English	
11. Course Description		
<p>This course is designed for Chemical & Petroleum Engineering and Biology students. It is a survey of organic chemistry functional groups; their nomenclature, structure, bonding, physical and chemical properties and discussion of structural rules that govern the formation of organic molecules, the importance of bond polarity and functional groups. The importance of stereoisomerism and molecular shape, structure of benzene and non-benzenoid heterocyclic ring systems. The course will connect petroleum, natural rubber, aspirin and other analgesics, health aspects of alcohol consumption, taste and smell, steroids, chiral drugs, structural aspects of miracle compounds, insect control, synthetic polymers, sickle cell disease and diabetes.</p>		
12. Teaching/Learning Strategies		
<p>The theory part is covered in the lectures and students practical skills are developed during the lab sessions. Moodle is used as an online platform to support student learning.</p>		
13. Evaluation Methods		
<p>Final Examination 50%; Laboratory 20%; Midterm Exams 30%. Exam I - Week 6 (Tuesday, March 05, 2024). Exam II - Week 13 (Tuesday, April 09, 2024). In case an exam or test is canceled due to a holiday it will automatically be moved to the next week</p>		
14. Required Course Core Material		
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: <ol style="list-style-type: none"> 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 	B. SQU graduates possess <ol style="list-style-type: none"> 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 	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.
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#	Course Learning Objective	Relevant Program Outcome(s)	Applicable Attribute(s)
1.	Explain bonding properties in organic compounds and correctly represent organic structures in different drawing styles	PO1	A1, A2
2.	Recognize functional groups and provide correct names for polfunctional organic compounds	PO6 & PO10	A1, A2
3.	Outline properties and characteristics of functional groups in organic chemistry, and methods to prepare those functional groups, and describe important reactions of these functional groups	PO2 & PO6	A1, A2
4.	Correctly assign stereocenters and explain the concept of stereoisomerism	PO3	A1, A2, A3
5.	Mechanistically explain chemical transformations using proper formulas and reaction equations	PO1	A1, A2, A3
6.	Describe the importance of certain natural and industrial products and explain properties of compounds based on their structural characteristics	PO1 & PO6	A1, A2, A3
7.	Name important industrial and pharmaceutical products and describe proper methods for the preparation of these materials	PO8	A1, A2
8.	Be a good team player to achieve common goals	PO5	B4
9.	Be able to manage their time, meet deadlines and organize their work efficiently	PO4	P3
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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:

,dishonShould attend all quizzes and tests. Only official excuses will be acceptable, however, no make-up test/quiz will be given.

COURSE INFORMATION				
Course Code	CHEM 3324	Course Title	Organic Chemistry	
Year/Semester	2024/Spring	Section	10	
Day, Time, and Place	Sun, Tue 8:00-9:20 am LET 3 Lab Tue 2:15-5:15 & Thu 10:00 - 12:55 SCI 1006 (Chemistry Lab C)			
Course Coordinator	Dr. W. M. Zoghaib			
Office Location	SCI 2080	Office Hours	Sun & Tue 10:00 - 11:00 & By appointment	
Office Ext.	2472	Email	zoghaibw@squ.edu.om	
Tentative Schedule				
Week	Lecture/Topic	Material to be Covered	Assignment /Exam	Weight (%)
1	Ch 1 Structure & Bonding. Acids & Bases	all sections	chapter problems	
2	Ch 2 Alkanes	all sections	chapter problems	
3	Ch 3 Alkenes	all sections	chapter problems	
4	Ch 4 Reactions of Alkenes and Alkynes	4.1-4.7, 4.13	chapter problems Exam I	15%
5	Ch 5 Aromatic	all sections	chapter problems	
6	Ch 6 Stereochemistry	6.1-6.4, 6.6-6.8, 6.11	chapter problems	
7	Ch 7 Alkyl halides	7.1-7.8	chapter problems	
8	Ch 8 Alcohols, Phenols and Ethers	8.1-8.7	chapter problems	
9	Ch 9 Aldehydes and Ketones	9.1-9.6, 9.9	chapter problems	
10	Ch 10 Carboxylic Acids and Derivatives	10.1, 10.3, 10.4-10.8, 10.11	chapter problems Exam II	15%
11	Ch 12 Amines	12.1-12.6	chapter problems	
12	Ch 14 Biomolecules, Carbohydrates	14.1-14.5, 14.6-14.10	chapter problems	
13	Ch 15 Biomolecules, Proteins	15.1, 15.3-15.9		
14	Catch-up week			
15	Review week			

APPENDIX A: INSTRUCTORS OF MULTIPLE SECTIONS

[illegible]

APPENDIX B: ADDITIONAL INFORMATION

<p>Program Learning Outcomes</p>

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