

المملكة العربية السعودية الهيئة الوطنيسة للتقويم والاعتماد الأكاديمسي

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

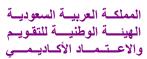
The National Commission for Academic Accreditation & Assessment

General Chemistry 2

4022131-2 Course Specifications (CS)







Course Specifications

Institution: Umm Al-Qura University	Date of Report: 2017
College/Department : Faculty of Applied Scien	nces / Chemistry Department

Α.	A. Course Identification and General Information				
1.	. Course title and code: General Chemistry 2/ 4022131-2				
2.	Credit hours: 2 (theoretical)				
3.	Program(s) in which the course is	offered: Che	mistry and Industrial (Chemistry	
	Name of faculty member responsi			sani	
	Level/year at which this course is		•		
6.	Pre-requisites for this course (if an	ıy): - Genera	l Chemistry 1		
7.	Co-requisites for this course (if an	y)			
8.	Location if not on main campus: b	oth on El-Ab	edyah and El-Zaher		
9.	Mode of Instruction (mark all that	apply)			
	a. Traditional classroom		What percentage?	100%	
	b. Blended (traditional and onlin	ne)	What percentage?		
	c. e-learning		What percentage?		
	d. Correspondence		What percentage?		
	f. Other		What percentage?		
C	Comments:				



- 1. What is the main purpose for this course?
 - By finishing of this course, the students will be able to discuss and explain:
- a. The atomic shells, their shapes and Bohr theory of hydrogen atom.
- b. Electronic structure and Lewis structures of different chemical compounds.
- c. The valence shell electron pairs repulsion theory, molecular orbital theory and valence bond theory.
- **d.** The principle quantum numbers, classification of elements and properties of ionic and covalent compounds.
- 2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)
- Using different learning sources of the course, so that the students make use of more than one reference.
- The use of smart teaching halls for lectures.
- Encourage students to carry out reports in the field of general chemistry.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached):

1. Topics to be Covered		
List of Topics	No. of	Contact
	Weeks	Hours
• Electronic structure – atomic shells and their shapes.	1	2
Bohr theory of hydrogen atom.	1	2
Principle quantum numbers.	1	2
• Properties of elements and the periodic table – classification of elements	1	2
into periods and groups.		



• Comparison between some properties of the elements inside the period	2	4
such as; ionization energy, electron affinity, electronegativity and atomic		
size.		
• Chemical bonds; their types and theories – Lewis symbols and structures.	1	2
• Valence shell electron pairs repulsion theory.	1	2
Valence bond theory.	1	2
Hybridization and its types	1	2
• Molecular orbital theory – octet rule.	2	4
• Properties of ionic and covalent compounds.	1	2

2. Course components (total contact hours and credits per semester):					
Lecture	Tutorial	Laboratory	Practical	Other:	Total
28	-		-		28
2	-		-		2
	Lecture	Lecture Tutorial	Lecture Tutorial Laboratory	Lecture Tutorial Laboratory Practical	Lecture Tutorial Laboratory Practical Other:

- 3. Additional private study/learning hours expected for students per week.
- Student spends 10 hrs in preparing reports related to general chemistry and their discussions.
- 4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains	Course Teaching	Course Assessment
	And Course Learning Outcomes	Strategies	Methods
1.0	Knowledge		
1.1	Describe the atomic shells and their shapes.	• Lectures	• Written mid-term and



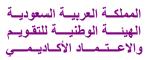
1.2	Write on classification of elements into	• Scientific	final exams
	periods and groups.	discussion	◆Long and short
1.3	List the properties of the elements	• Use the library to	essays.
	inside the periods and groups.	work duties and	
1.4	Memorize the valence shell electron	a small research	
	pairs repulsion theory.	on general	
1.5	Describe Bohr theory of hydrogen	chemistry.	
	atom.	•Use of the	
		Internet to carry	
		out some reports	
		on course	
		subjects.	
2.0	Cognitive Skills		
2.1	Predict the type of hybridization in a	• Lectures	• Periodic tests and
	chemical compounds.	• Scientific	assignments.
2.2	Explain Lewis structures of different	discussion	• Measuring the
	chemical compounds.	• Library visits	response to the
2.3	Compare between molecular orbital	Web-based study	assignments.
	theory and valence bond theory.		
2.4	Estimate the principle quantum		
	numbers of different chemical		
	compounds.		
3.0	Interpersonal Skills & Responsibility		
3.1		• Dividing students	• Evaluate the results
3.2	Develop the student's ability in self-	into groups to	of collective works
	reliance and responsibility.	carry out	and duties as well as
3.3	Operate in team work and accept his	collective	knowing the
	college's opinions.	scientific reports.	contribution of each
		• Periodic	individual through



		individual duties	dialogue and
		to develop the	discussion.
		skill of taking	•Assessment of
		responsibility	individual tasks and
		and self-reliance	duties to determine
			the student's ability to
			self-reliance.
4.0	Communication, Information Technology	ogy, Numerical	
4.1	Use computers and the international	• Visiting research	•Evaluation of the
	information network (the Internet) to	centers.	duties associated with
	perform calculations and to identify	•The use of	the proper use of
	recent research relevant to decision	computers in the	numerical and
	sources.	training room of	communication
4.2	Perform mathematical calculations and	the department.	skills.
	data analysis.	•Using the	• Web-based student
		internet for	performance systems
		collecting data.	• Individual and group
			presentations.
5.0	Psychomotor	1	
5.1	• Not applicable.		
5.2			

5. S	5. Schedule of Assessment Tasks for Students During the Semester				
	Assessment task (e.g. essay, test, group project,	Week	Proportion of Total		
	examination, speech, oral presentation, etc.)	Due	Assessment		
1	Homework or activities.		10 %		
2	First Periodic Exam.	6	20 %		
3	Second Periodic Exam.	12	20 %		
4	Final Exam.(2 hours exam)	16	50 %		





5	Total	100 %

D. Student Academic Counseling and Support

- 1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)
- Office hours: During the working hours weekly.
- Academic Advising for students.
- Availability of Staff members to provide counseling and advice.

E. Learning Resources

- 1. List Required Textbooks
- General Chemistry: The Essential Concepts 7th Edition by Raymond Chang Dr., Kenneth Goldsby Professor, 2013.
- 2. List Essential References Materials (Journals, Reports, etc.)
- D. A. McQuarrie, J. D. Simon. Physical Chemistry: A Molecular Approach. University Science Books, 1997.
- J. D. Lee, Concise Inorganic Chemistry, 5th ed., Wiley-Blackwell, 1998.
- 3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)
- Inorganic Chemistry Catherine Housecroft and Alan G. Sharpe, 4th ed. Pearson, 2012.
- H. B. Gray. Chemical Bonds: An Introduction to Atomic and Molecular Structure, University Science Books, 1994.
- 4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)
 - http://www.chemweb.com
 - http://www.sciencedirect.com
 - http://www.rsc.org
- 5. Other learning material such as computer-based programs/CD, professional standards or



regulations and software. : - Not required.

F. Facilities Required

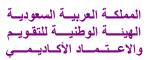
Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)

- 1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
- Equipped lecture halls.
- 2. Computing resources (AV, data show, Smart Board, software, etc.)
- Room equipped with computer, data show and TV.
- 3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)
- No other requirements.

G. Course Evaluation and Improvement Processes

- 1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching
- Questionnaire evaluation of the course each semester.
- 2. Other Strategies for Evaluation of Teaching by the Program/Department Instructor
- Preparation of a course report and study of the results of the students to give us indication about the planned outputs and the extent to which student's benefits.
- 3. Processes for Improvement of Teaching
- Exchange of experiences internal and external.
- Application of e-learning.
- Review of strategies proposed.
- Providing new tools for learning.
- 4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)
- Check marking of a sample of exam papers, or student work.





- Exchange corrected sample of assignments or exam basis with another staff member for the same course in other faculty.
- 5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.
- Consulting other staff of the course.
- Hosting a visiting staff to evaluate of the course.
- Workshops for teachers of the course.
- Periodic review of the contents of the syllabus and modify the negatives.

Faculty or Teaching Staff: Dr. Mona Alhasani

Signature: Date Report Completed: 12/1/2019

Received by: Dr. Ismail Althagafi Department Head

Signature: Date: 20/1/2019