



The University of Jordan

Accreditation & Quality Assurance Center

COURSE Syllabus

1	Course title	General Chemistry 1
2	Course number	0303101
3	Credit hours (theory, practical)	3 (3,0)
	Contact hours (theory, practical)	26 (26,0)
4	Prerequisites/corequisites	High school certificate, scientific track
5	Program title	This course is required for many programs and degrees offered by many faculties in the university.
6	Program code	N/A
7	Awarding institution	The University of Jordan
8	Faculty	Faculty of Science
9	Department	Department of Chemistry
10	Level of course	Undergraduate
11	Year of study and semester (s)	Typically first year; 1 st , 2 nd , or summer semester
12	Final Qualification	N/A
13	Other department (s) involved in teaching the course	N/A
14	Language of Instruction	English
15	Date of production/revision	July 17, 2017

16. Course Coordinator:

Dr. Deeb Taher; Chemistry building, 3st floor, office 109; Phone: +962-6-5355000, Ext: 22165; email: d.tahjer@ju.edu.jo.

Office hours: Sun, Tue, Thurs.: 8:00-9:00; Mon, Wed: 13:00-14:00

17. Other instructors:

1. Dr. Firas F. awwadi; Chemistry building, Phone ext: 22175; email: f.awwadi@ju.edu.jo

18. Course Description:

General chemistry 1 is an introductory course intended for first year university students. It covers basic topics including: The scientific method, measurements and significant figures, units and dimensional analysis, naming simple inorganic compounds, stoichiometry, basic reactions in aqueous solutions and solution stoichiometry, properties of gases and kinetic molecular theory, measurements and calculations of energy associated with physical changes and chemical reactions, basic quantum theory and the electronic structure of the atoms, atomic periodic properties, ionic bonding, covalent bonding, molecular geometry, and hybridization of atomic orbitals.

19. Course aims and outcomes:

<p>A- Aims:</p> <ol style="list-style-type: none"> 1. To instill in students a sense of enthusiasm for chemistry, an appreciation of its application in different contexts and to involve them in a satisfying experience of learning and studying. 2. To provide students with a broad and balanced foundation of chemical knowledge. 3. To develop in students the ability to apply their chemical knowledge and skills to the solution of theoretical problems in chemistry. 4. To develop in students, through an education in chemistry, a range of transferable skills, in chemical and allied chemical employment related to course content. 5. To provide students with a knowledge and skills base from which they can proceed to further studies in specialized areas of chemistry or multi-disciplinary areas involving chemistry.
<p>B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to:</p>
<p>1. Knowledge and Understanding Skills: Students are expected to</p>
1.1. Know elementary chemical terminology, nomenclature and units used in chemistry.
1.2. Understand stoichiometry, solution stoichiometry, and reaction stoichiometry.
1.3. Classify the major types of chemical reactions in aqueous solutions and their main characteristics.
1.4. Understand the principles and procedures used in quantitative chemical analysis.
1.5. Explain the basic empirical gas relationships and the kinetic molecular theory of gases.
1.6. Discuss the different aspects of energy changes in chemical reactions.
1.7. Understand the principles of quantum mechanics and their application to the description of the electronic structure of atoms.
1.8. Know the characteristic properties of elements and their compounds and trends within the periodic table.
1.9. Understand the basic aspects of chemical bonding and molecular geometry.
<p>2. Intellectual, analytical, and cognitive Skills: Students are expected to</p>
2.1. Acquire a quantitative understanding of chemistry.
2.2. Acquire problem-solving skills.
2.3. Integrate the fundamental subjects learned with practical applications.
<p>3. Subject-Specific Skills: Students are expected to:</p>
3.1. Appreciate the role of the scientific method.
3.2. Able to understand the scientific approach in learning solving problems.
<p>4. Creativity/Transferable Key Skills: Students are expected to:</p>
4.1. Communicate effectively both orally and written.
4.2. Work independently and collaborate effectively with other people in a team.
4.3. Interpersonal skills, relating to the ability to interact with other people and to engage in team-working.
4.4. Self-evaluate their own learning progress, and develop motivation and learning skills for lifelong learning.
4.5. Study skills needed for continuing studying of higher courses of chemistry and other related interdisciplines.
4.6. Time-management skills, as evidenced by the ability to plan and implement efficient and effective modes of studying.

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Introduction to chemistry	1	Dr Deeb taher & Firas F. Awwadi	1.1,3.1	Computerized exams.	General Chemistry, the essential concept, 7th ed, R. Chang, McGraw-Hill, 2015. Ch 1
Atoms, molecules, and ions	1	#	1.1	Computerized exams.	<i>ibid</i> , Ch 2
Stoichiometry	2	#	1.2,1.3,2.1	Computerized exams.	<i>ibid</i> , Ch 3
Reactions in aqueous solutions	2	#	1.2,1.3,1.4	Computerized exams.	<i>ibid</i> , Ch 4
Gases	2	#	1.2,1.5,2.1	Computerized exams.	<i>ibid</i> , Ch 5
Energy relationships in chemical reactions	3	#	1.6,2.1,2.2	Computerized exams.	<i>ibid</i> , Ch 6
The electronic structure of atoms	4	#	1.7,3.1,3.2	Computerized exams.	<i>ibid</i> , Ch 7
The periodic table	4	#	1.8	Computerized exams.	<i>ibid</i> , Ch 8
Chemical bonding	5	#	1.9,2.2	Computerized exams.	<i>ibid</i> , Ch 9
Molecular geometry and orbital hybridization	5	#	1.9,2.2	Computerized exams.	<i>ibid</i> , Ch 10

21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

Lectures, open discussions, case studies, and brainstorming.

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Computerized exams

23. Course Policies:

A- Attendance policies: Students should attend at least 85% of the lectures.

B- Absences from exams and handing in assignments on time: If an exam is missed for a documented serious and compelling reason, a make-up exam will be held at a time and place of the instructor's discretion. Final exam make-up is held according to university regulations.

C- Health and safety procedures: Dealt with according to university regulations.

D- Honesty policy regarding cheating, plagiarism, misbehavior: Dealt with according to university regulations.

E- Grading policy: The grading scheme is as follows:

1. First exam 25%
2. Second exam 25%
3. Final exam: 50%

The letter grade scale is adopted.

F- Available university services that support achievement in the course: Central library, personal computer labs at different locations in the university, e-learning site, faculty members website.

24. Required equipment:

N/A

25. References:

A- Required book (s), assigned reading and audio-visuals: General Chemistry, The essential concept, 7th ed., R. Chang, McGraw-Hill, 2016.

B- Recommended books, materials, and media:

1. Chemistry, 9th ed., S. Zumdahl & S. Zumdahl, Brooks Cole, 2013.
2. General Chemistry, 10th ed., D. Ebbing & S. Gammon, Brooks Cole, 2013.

26. Additional information:

This course is required by almost all students in scientific faculties at the University of Jordan. The number of students registered in general chemistry 1 (0303101) course in Spring 2016/2017 is 886 student distributed among 13 sections.

Name of Course Coordinator: Dr. Deeb Taher--- Signature: ----- Date: July 17, 2017

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- Signature: -----

Copy to:

Head of Department
Assistant Dean for Quality Assurance
Course File