



Faculty of Science
Department of chemistry
Second Semester (Spring) 2018/2019
Tentative Course Syllabus

Course information:

Course number: CHEM 141	Course title: General chemistry 1
Pre requisite: N/A	Co requisite: CHEM 111

Instructors Information:

Instructor Name	Section #	E-mail	Office	Phone
Dr. Diab Qadah	1	dqadah@birzeit.edu	Sci. 318	5021
Dr. Mohammed H. M. Aljabari	2	maljabari@birzeit.edu	Sci. 324	5235

Office Hours:

Instructor Name	Section	Day/Time/Room
Dr. Diab Qadah	01	T&R: 11:30 AM – 01:30 PM W: 10:30 AM – 12:30 PM

Please, also observe office hours as posted at ritaj or make an appointment for a different time.

Lecture Schedule:

Instructor Name	Section	Day/Time/Room
Dr. Diab Qadah	01	M: 10:00 – 10:50 AM/ Sci. 013 T & R: 10:00 – 11:15 AM/Bamieh 101
Dr. Mohammed H. M. Aljabari	02	S: 12:00 – 12:50/Sci. 112 T & R: 12:50 – 14:05/Sci. 214

Course Description (4:3:1):

This course is first of a year-long course intended primarily for first year science majors and doctor of pharmacy students. It is a general introduction to chemistry course that incorporates both lectures and laboratory experiments in developing an understanding of chemical concepts and practices. It provides the students with comprehensive description of the basic principles and concepts in chemistry including the periodic table of elements, atomic structure, basic concepts of quantum theory, stoichiometry of compounds and reactions, thermochemistry, molecular structure, bonding, intermolecular interactions, the gaseous state, and solutions.

Course Goals:

The major goals of this course are to:

- Introduce the students to the language of chemistry and the scientific way of critical thinking and problem solving.
- Provide basic information for the understanding of how the states of matter can be described and altered and used to express chemical changes in the form of balanced chemical equations.
- Provide clear understanding of the various laws related to the behavior of the ideal gases.
- Give an insight on how energy is transformed during a chemical reaction.
- Acquainted students with the periodic table and periodicity.
- Introduce the fundamental concepts of bonding, bonding models, and molecular geometry.

Course Outcomes:

Upon successful completion of this course, the students will:

1. Become **active learners** in the class and follow class rules.

Assessment method: Students' class performance includes class participation and class activities.

2. Be able to :
 - a. Demonstrate **knowledge** of fundamental concepts in chemistry including measurement, classification of matter, atomic structure, the periodic table, chemical equations, oxidation reduction reactions, gas laws, thermochemistry, quantum mechanics, chemical bonding, and molecular orbital theory;
 - b. Demonstrate **quantitative reasoning skills** including proficiency in calculation skills, and the ability to accurately interpret numerical data;
 - c. Demonstrate an ability to **solve problems competently** using approximation, precision, accuracy, and statistical validity

Assessment will be performed based on students' performance in exams that will be assigned. Assessment will be performed based on students' performance in exams .

Course Topics and Contents:

Item#	Chapter #	Topic	Assignments and due dates
1	1 1.1- 1.5	Introduction Keys to the Study of Chemistry.	Read Appendix A at the back of book: math used in C142. Quiz 1
2	2 2.1-2.9	Components of Matter	Quiz 2
3	3 3.1-3.5	Stoichiometry.	Quiz 3
4	4 4.1-4.6	The Major Classes of Chemical Reactions.	Quiz 4
5		EXAM I	
6	5 5.1- 5.7	Gases and the Kinetic-Molecular Theory	Quiz 5
7	6 6.1-6.6	Thermochemistry: Energy Flow and Chemical Change.	Quiz 6
8	7 7.1 -7.4	Quantum Theory and Atomic Structure.	Quiz 7
		EXAM II	
9	8 8.1-8.5	Complexes and Complex Formation Titrations	Quiz 8
10	9 9.1-9.5	Models of chemical bonding	Quiz 9
11	10 10.1-10.3	The shapes of molecules	Quiz 10
		EXAM III	
12	11 11.1- 11.3	Theories of covalent bonding	
13	12 12.1- 12.6	Intermolecular forces and phase changes	
14		Review of Semester's Material	
		Final EXAM	

Suggested Problems

Chapter 01	1,3,5,7,10,14,16,18,19,21,25,27,29,33,37,42,43,44,46,48,50,52,53,56,61,63,68,73,76,79,80.
Chapter 02	1,4,5,6,9,10,14,16,19,21,24,26,32,36,39,41,43,45,50,52,54,56,58,59,64,66,68,70,74,76,80,83, 85,87,90,92,94,96,98,100.
Chapter 03	2,7,13,19,22,25,27,29,31,33,34,36,37,40,42,43,46,52,54,56,58,60,66,70,74,76,84,86,92,97,99,102,110.
Chapter 04	2,8,10,12,14,16,19,20,21,24,26,28,32,34,38,40,42,44,46,49,52,56,62,63,66,68,72,74,76,79,80,81,84,87,91,93,96,97,98.
Chapter 05	1,5,6,7,11,13,15,17,19,20,23,25,27,28,30,33,34,37,40,43,45,47,51,54,55,58,60,63,65,67,69,71,74,76,80,81,87,92,95,97,106,107.
Chapter 06	1,3,5,6,7,10,13,17,18,20,23,24,25,28,31,32,33,35,37,39,41,42,44,47,49,50,53,55,58,59,60,63,65,67,70,74,75,80,81,84.
Chapter 07	2,6,7,9,11,15,17,19,22,25,28,29,33,35,37,38,39,41,44,48,50,51,53,56,59,60,63,67,68,72,73.
Chapter 08	2,4,5,8,9,10,12,18,20,24,26,30,33,35,36,38,42,44,47,53,55,59,61,63,64,65,66,67,70,71,73.
Chapter 09	1,2,3,4,6,8,10,12,16,18,21,27,28,29,31,35,36,40,42,43,45,49,51,53,57,58,60,63,64,66,67,70
Chapter 10	1,2,3,5,9,13,15,17,21,22,24,26,27,29,31,32,33,37,39,41,45,47,50,52,54,56,57,61,65,70,72,74,76,79,80,81.
Chapter 11	1,2,3,5,7,10,11,13,15,19,20,23,25,27,31,33,35,36,37,39,41,45,47,50,51,54.
Chapter 12	1,2,3,4,5,7,9,12,15,17,19,21,22,23,26,27,30,32,34,36,39,40,42,45,47,48,49,51,53,59,60,62,63,64,65,66,68,70,77,82,89,93.

Teaching and Learning Methodologies:

A combination of various teaching and learning methodologies will be implemented in order to maximize students' intellectual abilities and develop their learning capabilities:

- Up- to- date technology will be applied during the delivery of the course using power point slides for lectures, and excel for the lab reports and data analysis in addition to handouts will be provided to disseminate knowledge among students about the different topics of the subject material.
- Assignments that demand students to find up-to-date information through the use of library, internet and directed supervision will be included to enhance students' skills in using library and other learning resources.
- Demonstrations of team work through performing the experiments in the lab

- Demonstration of knowledge and understanding of specific topics through reading a scientifically published paper and presenting it will be implemented in order to develop students' abilities to analyze data and use information related to their program of study.

Course Assessment Details:

The grade distribution for the laboratory and the lecture is as follows:

Methods of assessment	Relative weight %	Outline details
3 exams @ 25% each	50 % (the grades of the best two exams will be used)	
Final exam	40%	Comprehensive
Lecture short quizzes and participation	10%	

Course Textbook, Instructional Material and Learning Resources:

Author	Title	ISBN -13	Edition	Publisher
Martin Silberberg	Principles of General Chemistry	978-0073402697	3 rd , 2013	McGraw Hill
Calculator: Able to perform Ln and Log function				

Grading scale:

BZU course grading scale is as follows:

Mark	Designation
90-100	Excellent
80-89	Very Good
70-79	Good
60-69	Fair
0-59	Fail

Instructor's course specific rules and regulations:

Very Important Note:

All students who enrolled in CHEM 141 have taken a positive step to enroll. This to me means we have a contract between us, you will attend class on time regularly and I will commence

classes on time and will conduct a class that is designed to help you understand the concepts presented in this chemistry class.

If for any reason you want to break this contract, you (the student) must make and take a positive step to remove yourself from the roll sheet prior to the last day to drop the class. If you do not then the grade recorded on the final day of the semester will be the grade for the semester.

Cellphones Policy:

The use of cellphones is NOT allowed during class; therefore, students are required to switch off their phones once they enter the classroom. You will be asked to leave the classroom if you violate this policy.

Students with Disabilities:

I encourage students with disabilities, including “invisible” disabilities such as chronic diseases, learning, and psychological disabilities, to explain their needs and appropriate accommodations to me during my office hour. Please bring a verification of your disability for accommodating your needs.

University honor code

Academic Honesty:

You are expected to comply with the university honor code. Please read it on Ritaj

<https://ritaj.birzeit.edu/university-laws/#>