The Hashemite University
Faculty of Science
Course Syllabus

Department of Chemistry

Course Name: Basics of General Chemistry
Course Number: 1701081137
Pre-requisite:
Credit Hours: 3
Designation: Compulsory for non-science students
Coordinator: Dr. Mahmoud.sunjuk
Coordinator's E-mail
Mahmoud.sunjuk@hu.edu.jo
Office Hours: 11-12 (Sun, Mon, Tues, Thurs).

Course Description (Catalog): This course is intended to illustrate the basic principles of modern chemistry. It includes the following topics: the mole concept and chemical calculations, gases and gas laws, states of matter and intermolecular forces, properties of solutions, thermochemistry and chemical thermodynamics, chemical equilibrium in gaseous systems, acid–base equilibria in aqueous solutions, electrochemistry, principles of organic chemistry.

Text Book: Raymond Chang, Chemistry McGraw Hill 11th Edition 2013.

Major Topics Covered:

Topics	No. of Weeks	Contact Hours*
Mass Relationships In Chemical Reactions (sections: 3.2, 3.3, 3.6, 3.8, 3.9, 3.10)	1	3
Gases (sections: 5.3, 5.4, 5.5, 5.6 , 5.7 p.207&209)	2	6
Intermolecular Forces and Liquids and Solids (sections: 11.2, 11.3, 11.8)	2	6
Physical Properties of Solutions (sections: 12.6,12.7)	1	3
Chemical Equilibrium (sections: 14.1, 14.2 and 14.4)	2	6
Acids and Bases (sections: 15.1, 15.2, 15.3, 15.4, 15.5, 15.6, 15.7, 15.10,15.12)	2	6
Thermochemistry (sections: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6)	2	6
Entropy, Free Energy and Equilibrium (sections: 17.1, 17.2, 17.3, 17.4, 17.5, 17.6)	2	6
Electrochemistry (sections: 18.2, 18.3, 18.4, 18.5)	1	3
Total	**15**	**45**

*Contact Hours include lectures, quizzes and exams.

- **Specific Outcomes of Instruction (Course Learning Outcomes):**
  After completing this course units, the students will be able to:

	Course Learning Outcomes (CLO)	(SO*)
CLO1	Calculate amounts within a chemical reaction.	a, c
CLO2	Determine physical properties of gases and amount calculations of reactions involving gases.	a, b, e,
CLO3	Verify types of attraction forces between molecules and explain physical properties relying on these forces.	a, b, e,
CLO4	Predict reaction direction of reversible reactions and calculate amounts at equilibrium.	a, c
CLO5	Identify acids and bases and their properties in aqueous solutions and calculate or determine their strength.	a, b,c,e,f
CLO6	Calculate heat and energy within a chemical reaction and determine thermodynamic elements that make the reaction favorable.	a, b,c
CLO7	Identify redox reactions involving a transfer of electrons and calculate the potential of the electrical current produced in these reactions at standard and non-standard conditions.	a, b,c,d,e,f

*(SO) = Student Outcomes Addressed by the Course.

- **Student Outcomes (SO) Addressed by the Program:**

#	Outcomes Description Chemistry Student Outcomes	Contribution
(a)	Recognize and explain the fundamentals of the main areas of chemistry: Analytical, Organic, Inorganic, and Physical.	H
(b)	Explain principles and theories related to chemical structure, reactivity, reaction mechanisms, and properties of matter.	H
(c)	Perform mathematical calculations and data analysis related to chemistry disciplines.	H
(d)	Perform experimental procedures and lab measurements, examine data, and interpret results required to carry out a chemical research.	L
(e)	Relate and value the role of chemistry in industry and daily life.	H
(f)	Handle chemical substances and follow safety procedures and regulations in lab and workplace.	M

H = High, **M** = Medium, **L** = Low

Grading Plan:

First Exam:	30 points	To be announced later
Second Exam:	30 points	To be announced later
Final Exam:	40 points	To be announced later

General Notes: (Attendance Policy) students are expected to attend every class and arrive on time in compliance with HU regulations. In case you find yourself in a situation that prevents you from attending class or exam, you have to inform your instructor. If you miss more than 6 classes for the (Sunday, Tuesday, and Thursday model) or 4 classes for the (Monday and Wednesday Model), you cannot pass the course. Makeup excuses will be accepted only for very limited justified cases, such as illness and emergencies. Changing your section without informing your instructors is not accepted at all.