2023
TP-153

Course Specification
(Bachelor)

Course Title:	General Chemistry (I)
Course Code:	CHEM102-3
Program:	Bachelor of Science in Chemistry
Department:	Department of Physical Sciences
College:	College of Science
Institution:	Jazan University
Version:	TP-153 (2024)
Last Revision Date:	1 February 2024

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (2hrs)

2. Course type

A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☒ Required		☐ Elective		

3. Level/year at which this course is offered: (5th Level--- 3rd Year.)

4. Course general Description:

Course title	Course code	Contact Hours			Credit Hours	Year	Level	Prerequisite	Corequisite
		Lec	Tut	Lab					
General Chemistry (1)	CHEM102-3	3	0	0	3	1st	2nd	-	-

This course aims to give the student learns about chemistry and its importance and learns about the principles and basics of atomic structure and the periodic table to understand matter and its properties.

5. Pre-requirements for this course (if any)**:**

Non

6. Co-requisites for this course (if any)**:**

Non

7. Course Main Objective(s):

1- Identify the science of chemistry, its basic branches, and the method of studying it.
2- Understanding the atomic structure and the electronic structure of atoms.
3- Identify the periodic table and interpret the results of the periodic arrangement of elements in the periodic table.
4- Study bonds and their types and understand how to write the formulas of inorganic chemical compounds and name them.
5- Understanding and determining the molecular geometry and the hybridization of atomic orbitals.
6- Studying organic compounds, classifying them, and distinguishing between functional groups in organic compounds.
7- Identify acids, bases, and salts and distinguish between their reactions.
8- Understanding chemical equations and related calculations.
9- Study chemical reactions and distinguish between them.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	$(3 \times 15) = 45$	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	45
2.	**Laboratory/Studio**	
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		45

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding;** *Upon completion of the course, students are able to:*			
1.1	**Demonstrate a broad, knowledge and understanding in fundamentals of general chemistry (I)**	K1	Lectures, Class Discussion	Objective Q
1.2	**Describe the phenomenon of liquid state, boiling point, vapor pressure, surface tension, chemical equilibrium, ionic equilibrium, type of bonds and introduction to organic compounds.(I)**	K2	Lectures, Class Discussion	Objective Q
2.0	**Skills;** *Upon completion of the course, students are able to:*			
2.1				

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.1	*Demonstrate the gained knowledge and skills to solve problems associated with different topics in the course as, gas law, pH, chemical equilibrium, etc. (I)*	S1	Lectures, Class Discussion	***Solve problem***
2.4	Make effective use of communication, and online technology about chemistry topics in order to improve their basic knowledge in writing (report and paper/ poster) with a good verbal and clear scientific language. (P)	S4	project-based learning	Research presentation rubric

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to the study of chemistry - matter and its properties	4
2.	*Atoms-molecules and periodic tabled*	4
3.	*Measurement and handling numbers- atomic structure and electronic structure of atoms*	4
4.	*chemical and physical bonds*	4
5.	*Ionic bond - formulas and names of ionic compounds - properties and composition of ionic compounds*	4
6.	*covalent bond - Lewis structures - formulas of covalent compounds and their names - geometry of inorganic molecules*	4
7.	*valence bond theory - molecular orbital theory - hybridization of atomic orbitals -*	5
8.	*Organic compounds and their classification*	4
9.	*Chemical equations and calculations*	4
10	Properties of aqueous solutions	*4*
11	Acids, bases, and salts	2
12	Chemical reactions and their types.	2
Total		45

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	*Periodic Exams*	*During Semester*	*30%*
2.	*Assignments & Classroom Activities*	*During Semester*	*20%*
6.	*Final Exam*	*16-17*	*50%*
	Total		*100%*

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	*1. ريموند تشانغ: الكيمياء العامة المفاهيم الأساسية – لجنة التعريب والترجمة بوزارة التعليم العالي – المملكة العربية السعودية – مكتبة العبيكان – (2014).*
Supportive References	*2. Silberberg, Martn S. Chemistry: The Molecular Nature of Matter & Change. 7th edition New York: McGraw-Hill, 2009.* *3. Janice Gorzynski Smith. General, organic, and biological chemistry. 1st edition New York: McGraw-Hill, 2010*
Electronic Materials	Some course contents and materials are posted on Black board sites
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	1 Lecture room(s) for groups of 50 students
Technology equipment (projector, smart board, software)	Smart board, Data show, Black board, internet
Other equipment (depending on the nature of the specialty)	none

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Student	Likert-type Survey CES) Indirect
Effectiveness of Students' assessment	Instructor & Course coordinator	Class room evaluation (direct & indirect

Assessment Areas/Issues	Assessor	Assessment Methods
Quality of learning resources	Program coordinator	Indirect
The extent to which CLOs have been achieved	Assessment committee	Indirect
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Chemistry Department Council
REFERENCE NO.	Meeting no.2
DATE	08 /08 /1445 Corresponding to 18 / 02 /2024