



Course Specification

(Bachelor)

Course Title: **General Chemistry**

Course Code: **171-CHM-2**

Program: **Chemistry**

Department: **Chemistry**

College: **Science and Arts**

Institution: **Najran University**

Version: **18/01/2024**

Last Revision Date: **01/04/2023**

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A. General information about the course:

1. Course Identification

1. Credit hours: (2)

2. Course type

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

3. Level/year at which this course is offered: (.....)

4. Course general Description:

Introduces the general principles of chemistry for students planning a professional career in chemistry, a related science, the health professions, or engineering. By the end of this course the student will be able to understand the following: Significant figures, scientific notation and units, stoichiometry, atomic structure & periodic table, acid base theories, chemical formula, chemical equilibrium, ionic equilibrium,

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

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

7. Course Main Objective(s):

This course is an introductory chemistry course designed to prepare students for health college.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	26	100%
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> Traditional classroom E-learning 		
4	Distance learning		



3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	26
2.	Laboratory/Studio	-
3.	Field	-
4.	Tutorial	2
5.	Others (specify)	-
Total		

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			
1.1	<u>Student should be able to::</u> Explains the properties , laws of gaseous , liquid , solutions , their properties , how they form , work and ways to express their concentrations		<ul style="list-style-type: none"> Lectures Discussions Peer group presentation	Exams quizzes
1.2	New concept of chemical and ionic equilibrium and the factors affecting equilibrium		<ul style="list-style-type: none"> Lectures Discussions Seminar 	Exam quizzes
...				
2.0	Skills			
2.1	Balance chemical equations and calculate the percent yield of a reaction		Tutorials Discussions Peer group presentation	Exams web-based student
2.2	Uses calculator and computer to calculate problems and write reports		<ul style="list-style-type: none"> Lectures Tutorials Seminar Peer group presentation 	Exams web-based student



Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
...				
3.0	Values, autonomy, and responsibility			
3.1	The way of using scientific thinking, in research and discussion		▪ Seminar	Exams
3.2	Look below surface to find causes; observe & interpret; apply knowledge to real situations		<ul style="list-style-type: none"> ▪ Lectures ▪ Tutorials ▪ Discussions ▪ Seminar ▪ Peer group presentation 	Exams web-based student performance systems Work on research activity. Overall student Evaluating assignments.

C. Course Content

No	List of Topics	Contact Hours
1.	Stoichiometric calculations Balanced equations and mole ratios Calculate the quantities of compounds produced or consumed in a chemical reaction. Calculating Quantities of Reactants and Products. Solution stoichiometry.	6
2.	International system of units Introduction, SI-Units, and their prefix	2
3.	Chemical formula The Atomic Theory, The Structure of the Atom Atomic Number, Mass Number, and Isotopes	1 1 1
4.	Periodic Classification of the Elements Periodic Variation in Physical Properties Ionization Energy, Electron Affinity	1 1 1
5.	Acid base theories	2
6.	Chemical equilibrium	3
7.	Ionic equilibrium	3
8.	Alkanes, Alkenes and Alkynes	2
9.	Revision	2
Total		26



D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes'	2	5
2.	Homework	4	10
3.	Midterm Exam	6	20
4.	presentation	8	5
5.	Final exam	13	60

*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	General chemistry: principles and modern applications / Ralph H. Petrucci, F. Geoffrey Herring, Jeffrey D. Madura, Carey Bissonnette. —11th edition, 2017
Supportive References	General Chemistry - Principles and Structure - Part 1 - Fifth Edition - by James Brady and Gerard Humston Translated by Suleiman Saasa and Mamoun Halabi New York, 2nd edition, 1985
Electronic Materials	https://sdl.edu.sa/SDLPortal/Publishers.aspx
Other Learning Materials	computer-based programs / CDs and professional standards Microsoft Office such as PowerPoint and Word

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom capacity (40) students.
Technology equipment (projector, smart board, software)	projector
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students, Faculty, Program Leaders	Direct by using questionnaire and Indirect from student marks
Effectiveness of Students assessment	Program Leaders	direct
Quality of learning resources	Students, Faculty, Program Leaders	Directly and indirect



Assessment Areas/Issues	Assessor	Assessment Methods
The extent to which CLOs have been achieved	Students, Faculty, Program Leaders	direct
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	

