



Course Specification

— (Bachelor)

Course Title: General Chemistry

Course Code: 26113 CHEM

Program: All Engineering -Scientific Track

Department: Chemistry Department

College: Faculty of Science

Institution: University of Bisha

Version: 2

Last Revision Date: 25 July 2023

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A. General information about the course:

1. Course Identification

1. Credit hours: (4h)

2. Course type

A. University College Department Track Others

B. Required Elective

3. Level/year at which this course is offered: (2nd level/1st year)

4. Course general Description:

This course is an introductory chemistry course designed to prepare students for college level chemistry courses. It adbots the basic principles of physical, organic and inorganic chemistry, including atomic and electronic structure of matter, measurements, concentration of solutions, stoichiometry, properties of liquids and solids, as well as the periodic table and the significance of the information, chemical bonding, gaseous state and basic introduction to organic compounds.

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

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

7. Course Main Objective(s):

Identification of the main Principles in chemistry and detection of unknown radicals.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	75	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	45
2.	Laboratory/Studio	30
3.	Field	
4.	Tutorial	
5.	Others (specify)	
Total		75

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	Recognize the main fundamentals in physical, organic, and inorganic chemistry.	K1	Lectures Scientific discussion.	Midterm and final exams Quizzes.
1.2	Identify the anionic and cationic radicals concerning the practical part.	K1		
...				
2.0	Skills			
2.1	Explain the basic chemical concepts, chemical phenomena and use them to solve chemical problems.	S1	Lectures group discussions case study Homework assignments containing problem thinking	Midterm and final exams Quizzes Group discussion Homework
2.2	Design a scheme for identification of cationic and anionic radicals.	S1		
2.3	Communicate effectively with others.	S1		





Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
3.0	Values, autonomy, and responsibility			
3.1	Act in an ethical and responsible manner during laboratory sessions.	V1	Lectures-Labs E-Learning Systems for the communication with lecturer through the course work Research activities	Self-performance in class. Practical, theoretical exams and quizzes. Presentations.
3.2	Adopt self-learning strategies.	V1		
...				

C. Course Content

No	List of Topics	Contact Hours
1.	Atoms, Molecules, units & Formulas.	4.5
2.	Stoichiometry	4.5
3	Gases	4.5
4	Atomic Structure	4.5
5	Periodic Table & Bonding	9
6	Equilibrium	4.5
7	Ionic Equilibrium	9
8	Organic Chemistry & Biochemistry	4.5
	Practical part	
1	Safety rules, Introduction to identification of anionic radicals	3
2	Anions of the first group	3
3	Anions of the Second group	3
4	Anions of the group	3
5	Introduction to identification of cationic radicals and their importance Cations of the first group	3
6	Cations of the Second group	3
7	Cations of the Third group	3
8	Cations of the Fourth group	3



9	Cations of the Fifth group	3
10	Sixth group Cations of the	3
Total		75

Table: The matrix of consistency between the content and the learning outcomes of the course.

Theoretical part	Course Learning Outcomes						
	1.1	1.2	2.1	2.2	2.3	2.1	3.2
Topic 1	√	√			√		√
Topic 2	√	√	√		√		√
Topic 3	√	√	√		√		√
Topic 4	√	√			√		√
Topic 5	√	√			√		√
Topic 6	√	√	√	√	√		√
Topic 7	√	√	√	√	√		√
Topic 8	√	√			√		√

Practical part	Course Learning Outcomes						
	1.1	1.2	2.1	2.2	2.3	2.1	3.2
Topic 1		√		√	√	√	√
Topic 2		√		√	√	√	√
Topic 3		√		√	√	√	√
Topic 4		√		√	√	√	√
Topic 5		√		√	√	√	√
Topic 6		√		√	√	√	√
Topic 7		√		√	√	√	√
Topic 8		√		√	√	√	√
Topic 9		√		√	√	√	√
Topic 10		√		√	√	√	√
		√					



D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Theoretical Homework, quizzes, reports, and presentation.	1: 10	5 %
2.	Practical Achievement file (Practical experience reports, quizzes and representations).	1: 10	5 %
3.	First periodic exam	7: 8	10 %
4.	Second periodic exam	12:13	10 %
5.	Practical exam	15	20 %
6.	Final exam	End of Semester	50 %

*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	Belal El-Gammal, Saad Alshahrani, Gehan. M. Ibrahim , Faleh Al-Qahtani and Ayman A. Osman; General Chemistry: The Essential Principles; General Chemistry, A Group of Professors -Dammam 2022, ISBN: 978-603-8307-09-0
Supportive References	
Electronic Materials	- Blackboard. - PowerPoint presentations. - Digital library of University of Bisha https://ub.deepknowledge.io/Bisha
Other Learning Materials	Lawrence B. and Thomson H. , Chemistry for engineering students 3th edit. , USA, 2015.

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom with 30 seats. Analytical chemistry Lab
Technology equipment (projector, smart board, software)	- Data show – smart board.





Items	Resources
Other equipment (Depending on the nature of the specialty)	Data Show in Lab. - Overhead projector Laboratory equipment for individual students

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Teacher / Students/Peer reviewer	Direct / Indirect
Effectiveness of Students' assessment	Teacher / Program leader/Academic committee	Direct / Indirect
Quality of learning resources	Teacher / Students/ Academic committee	Direct / Indirect
The extent to which CLOs have been achieved	Teacher / Program Leader	Direct / Indirect
Other	-	-

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	College of Science
REFERENCE NO.	Meeting No. 20
DATE	17 August 2023

