2023
TP-153

Course Specification
(Bachelor)

Course Title:	Inorganic Chemistry I
Course Code:	CHEM225-3
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:	31/01/2024

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (3hrs)

2. Course type

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

3. Level/year at which this course is offered: (3rd Level--- 2nd Year.)

4. Course general Description:

Course title	Course code	Contact Hours			Credit Hours	Year	Level	Prerequisite	Corequisite
		Lec	Tut	Lab					
Inorganic Chemistry I	CHEM225-3	3	0	0	3	2nd	3rd	CHEM102-3	None

This course aims to introduce the students to know the deferent types of chemical bonds, the chemical compound structure, and a detailed study of the elements of the main groups and their different characteristics.

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

CHEM102-3

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

None

7. Course Main Objective(s):

1. Identifying the elements and their chemical and physical properties.
2. Identifying the modern periodic table of elements.
3. Studying the gradations of the properties of elements in the periodic table.
4. Identifying the different types of chemical bonds and the stereo structure of chemical compounds.
5. Recognizing methods of extraction and properties and interactions of elements of main groups.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	45	100%
2	E-learning		
3	Hybrid		

No	Mode of Instruction	Contact Hours	Percentage
	• 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 in the properties of Hydrogen, periodic table groups (I, II, III,…etc) elements and their related properties, preparation and uses. (I)**	**K(1)**	***Lecture/ group work discussion***	***Objective Q***
1.2	**Describe the types of hydrides, oxides and carbides. Describe the allotropy phenomena, and the difference in chemical and physical properties of the main groups. (I)**	**K(2)**	**Lecture/ group work discussion**	**Short answer Questions**
2.0	**Skills;** *Upon completion of the course, students are able to:*			
2.1	**Demonstrate the knowledge and skills required to calculate effective nuclear charge, formal charge, and draw molecular orbital diagram for the molecule. (I)**	**S(1)**	**lecture / discussion / Seminars /Individual presentation**	**Essay Q**

C. Course Content

No	List of Topics	Contact Hours
1.	***Abstract of Modern Atomic Theory***	**6**

2.	*Introduction to Molecular Orbital Theory , valence bond theory, Geometric Shape of Molecules*	6
3.	*Valence shell electron-pair repulsion (VSEPR)*	6
4	*Introduction to Solid State chemistry and Study of the properties of the elements in the groups and periods of the periodic table*	6
5.	*Chemistry of hydrogen*	3
5.	*Elements of the first group (Alkali Metals)*	3
7.	*Elements of the second group (Alkaline Earth Metals)*	3
8.	*Elements of the third group and the fourth group*	3
9.	*Elements of the fifth group and the sixth group*	3
10	*Elements of the seventh group (Halogens)*	3
11	*Elements of the eighth group (Noble Gases)*	3
Total		$3 \times 15w = 45$

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	*Concise Inorganic Chemistry, 5th Edition, J.D. Lee, Blackwell Science Ltd (1996).*
Supportive References	*1. Inorganic Chemistry, 5th Edition. Gary L. Miessler, St. Olaf College. Paul J. Fischer, Macalester College.* *2. Main Group Chemistry (Basic Concept in Chemistry), William Henderson, 2002.* *3. الكيمياء الغير عضوية , جارى ت. ميسلر, الطبعة الثانية, 2012.*
Electronic Materials	Some course contents and materials are posted on Black board sites
Other Learning Materials	*https://chem.libretexts.org/Courses/East_Tennessee_State_University/CHEM_3110%3A_Descriptive_Inorganic_Chemistry/01%3A_Introduction_to_Inorganic_Chemistry*

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
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	Physical Sciences Department Council
REFERENCE NO.	Meeting (3)
DATE	12/03/2024 -02/09/1445