هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	**Inorganic Chemistry 1**
Course Code:	**2042102-2**
Program:	**Bachelor in Chemistry**
Department:	**Department of Chemistry**
College:	**College of Sciences**
Institution:	**Taif University**

Table of Contents

A. Course Identification

1. Credit hours:	**2 (Theoretical)**
2. Course type	
a.	University ☐ College ☐ Department √ Others ☐
b.	Required √ Elective ☐
3. Level/year at which this course is offered:	**3rd Level/ 2nd Year**
4. Pre-requisites for this course (if any)**: General chemistry1 (204101-4)**	
5. Co-requisites for this course (if any)**:**	**NA**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	2 Theoretical hours/ Week	100 %
2	**Blended**	-	-
3	**E-learning**	-	-
4	**Distance learning**	-	-
5	**Other**	-	-

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	30
2	**Laboratory/Studio**	-
3	**Tutorial**	-
4	**Others** (specify)	-
	Total	**30**

B. Course Objectives and Learning Outcomes

1. Course Description

The course describes: Electronic configurations of elements and ions; Periodic trends: atomic radii, ionic radii, ionization energy, electron affinity; Ionic bonds, the formation of ionic solids and lattice energies in ionic solids; Covalent bonding in molecules, Comparison of ionic and covalent compounds; Chemistry of *s*-block elements; Chemistry of *p*-block elements; Electron-dot structures; Molecular shapes: The VSEPR model, Valence bond theory, Molecular orbital theory and Intermolecular chemical forces.

2. Course Main Objective

The course aims to study the basic aspects and the principles of inorganic chemistry and establishment of an appreciable role of inorganic chemistry in the chemical sciences.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding:**	
1.1	Recall Periodicity and molecular structure	K1

CLOs		Aligned PLOs
1.2	Describe the basic concepts of all properties of periodic table elements	K2
2	**Skills:**	
2.1	Apply the concept of Molecular orbital theory (MOT) and Valence bond theory	S1
2.2	Utilize the concepts of economic and environmental applications	S3
3	**Values:**	
3.1	Illustrate the concept of personal responsibility for achieving duties by teamwork	V1

C. Course Content

No	List of Topics	Contact Hours
1	Periodicity and the chemistry of the elements. Electronic configurations of elements and ions	4
2	Periodic trends: atomic radii, ionic radii, ionization energy, electron affinity	2
3	Ionic bonds, the formation of ionic solids and lattice energy	2
4	Covalent bonding in molecules. Comparison between ionic and covalent compounds	4
5	Electron-dot structures	2
6	Chemistry of s-block elements	4
7	Chemistry of p-block elements	4
8	Valence bond theory	4
9	Molecular shapes: The VSEPR model	2
10	Molecular orbital theory	2
Total		**30**

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Recall Periodicity and molecular structure.	Lecture	Written exam
1.2	Describe the basic concepts of all properties of periodic table elements.	Lecture	Written exam
2.0	**Skills**		
2.1	Apply the concept of Molecular orbital theory (MOT) and Valence bond theory.	Discussion	Homework Assignments
2.2	Utilize the concepts of economic and environmental applications	Discussion	Homework Assignments
3.0	**Values**		
3.1	Illustrate the concept of personal responsibility for achieving duties by	Collaborative Learning	Individual presentations

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	teamwork.		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Homework Assignments	Throughout Semester	15%
2	Individual presentations	Throughout Semester	5%
3	Periodical Exam	7/8	15%
4	Mid Term Exam	11/12	15%
5	Final exam	16	50%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

Commitment to the rules of the Academic Advising Department at the university in accordance with the academic guidance manual approved by the university and the attached forms, there are different arrangements made by teaching staff to support student consultations including;
- Office hours: 8 hours per a week for each academic member.
- Academic guidance: an academic member has a number of students to guide them throughout degree journey.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	• CHEMISTRY, John E. McMurry, Robert C. Fay and Jill K. Robinson (2016). Pearson Education Ltd., England, Latest Edition. ISBN: 978-0-321-94317-0.
Essential References Materials	• Introduction to Modern Inorganic Chemistry, K.M. MacKay, and R.A. MacKay, and W. Henderson (2002), Nelson Thornes Ltd., United Kingdom, Latest Edition. ISBN: 9780748764204.
Electronic Materials	• Saudi Digital Library (SDL)
Other Learning Materials	• Inorganic Chemistry, D. Shriver and P. Atkins (2010), Oxford University Press, Latest Edition. ISBN: 978-0199236176.

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	• Lecture hall with 100 seats.
Technology Resources (AV, data show, Smart Board, software, etc.)	• Computer and data show with Wi-Fi access.
Other Resources (Specify, e.g. if specific laboratory	--

Item	Resources
equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of Teaching and assessment.	Students	Survey (indirect method)
Extent of achievement of course learning outcomes	Program leader	Reports (Direct method)
Quality of learning resources	Peer referees Students	Reports (Direct method) Survey (indirect method)

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	**Department Council/ Quality assurance committee**
Reference No.	7-3-1445
Date	27/2/1445 HJ 12/09/2023 G