2023
TP-153

Course Specification

(Bachelor)

Course Title:	General Chemistry
Course Code:	204124-2
Program:	Bachelor in Computer Science
Department:	Department of Computer Science
College:	College of Computers and Information Technology
Institution:	Taif University
Version:	V1.2024
Last Revision Date:	01/02/2024

Table of Contents

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: (2/1)					
4. Course general Description:					
Introduction(Matter and Measurement), Atoms, Molecules, and Ions, Chemical Reactions and Reaction Stoichiometry, Aqueous Reactions and Solution Stoichiometry, Thermochemistry , Electronic Structure of Atoms, Periodic Properties of the Elements,Basic Concepts of Chemical Bonding, Molecular Geometries and Bonding Theories, Gases.					
5. Pre-requirements for this course (if any)**:**					
None					
6. Pre-requirements for this course (if any)**:**					
None					
7. Course Main Objective(s):					
Build good foundation in chemical knowledge					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2	100%
2	E-learning	0	0
3	Hybrid • Traditional classroom • E-learning	0	0
4	Distance learning	0	0

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	0
3.	**Field**	0
4.	**Tutorial**	0
5.	**Others (specify)**	0
Total		30

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 international system of units (SI), the molecular geometries, the gas laws, acid and base concepts.	K1	**Lecture**	**MID and Final**
1.2	Write and balance the chemical equations and the electronic configuration,	K1	**Lecture**	**MID and Final**
1.3	Describe the Rutherford's atomic model, the Hund's rule	K1		
2.0	**Skills**			
2.1	Distinguish between the atomic symbols.	S1	Lecture	**MID and Final**
2.2	Classify the chemical formulas.	S1	Lecture	**MID and Final**
2.3	Calculate the number of moles and atoms, the molecular weight,	S1	Lecture	**MID and Final**

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	the elemental percentage, the molar fraction and molarity, pH value and ΔH from ΔE and PΔV			
2.4	Interpret the hybridization of atomic orbitals.	S1	Lecture	**MID and Final**
2.5	Sketch and label the blocks of the periodic table of elements.	S1	Lecture	**MID and Final**
2.6	Relate the atomic radius of element and the ionization energy	S1	Lecture	**MID and Final**
3.0	**Values, autonomy, and responsibility**			
3.1	Work in groups	V2	Project and group discussion	Project Report
3.2	Cooperate with his colleges	V2	Project and group discussion	Project Report

C. Course Content

No	List of Topics	Contact Hours
1	Introduction: Matter and Measurement.	2
2	Atomic theory and Chemical Formulas and.	2
3	Stoichiometry.	2
4	Combination.	2
5	Solutions.	2
6	Acids and Bases.	2
7	Electrostatic potential energy .	2
8	Hess's Laws and Revision.	2
9	Quantum Mechanics	2
10	Atomic Electron Configurations..	2
11	Properties ofPeriodic Table	2
12	Molecular Shapes	2
13	Hybrid Orbitals	2
14	Gases laws	2
15	Dalton's Law of Partial Pressures and V.Kinetic-Molecular Theory	2

Total	30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1	Class participation (regular attendance, quizzes, read/report work and homework).	3rd ,4th,6th And 9th	20 marks
2	Exams1.	6th	15 marks
3	Exams2.	12th	15
4	Comprehensive Final-exam.	16th	50 marks

*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	Raymond Chang - Chemistry (12th Edition) (2015-01-23) [Hardcover] Hardcover – January 23, 2015
Supportive References	NON
Electronic Materials	Web Sites on the internet that as relevant to topics of the course.
Other Learning Materials	Multi media / CD associated with the textbooks (when available).

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	• Traditional Classrooms
Technology equipment (projector, smart board, software)	• White Board, datashow
Other equipment (depending on the nature of the specialty)	• NON

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	• Students • Faculty members • Coordinator • Council	• Course exit survey • Feedback from Faculty members • Feedback from Course Coordinator

Assessment Areas/Issues	Assessor	Assessment Methods
	• Curriculum Committees	• Feedback from council Feedback from Curriculum Committees
Effectiveness of Students assessment	• Students • Faculty members • Coordinator • Council • Curriculum Committees	• Course exit survey • Feedback from Faculty members • Feedback from Course Coordinator • Feedback from council Feedback from Curriculum Committees
Quality of learning resources	• Students • Faculty members • Coordinator • Council • Curriculum Committees	• Course exit survey • Feedback from Faculty members • Feedback from Course Coordinator • Feedback from council Feedback from Curriculum Committees
The extent to which CLOs have been achieved	• Students • Faculty members • Coordinator • Council • Curriculum Committees	• Course exit survey • Feedback from Faculty members • Feedback from Course Coordinator • Feedback from council • Feedback from Curriculum Committees
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**CS COUNCIL**
REFERENCE NO.	**MEETING #11**
DATE	**07/03/2024**