

Faculty: Faculty of Science	
Department: Service Courses Unit	Program: Bachelor's
Semester:	Academic year:



Course Plan

First: Course Information

Course No.	Course Title: General Chemistry 1	Credit Hours:3
Prerequisite:	Section No.:	Lecture Time:
Type Of Course:	<input checked="" type="checkbox"/> Obligatory Faculty Requirement <input type="checkbox"/> Elective University Requirement <input type="checkbox"/> Obligatory University Requirement <input type="checkbox"/> Faculty Requirement <input type="checkbox"/> Course Elective Specialty Requirement <input type="checkbox"/> Obligatory Specialization requirement	
Type of Learning:	<input type="checkbox"/> Face-to-Face Learning <input checked="" type="checkbox"/> Blended Learning(2 Face-to-Face + 1Asynchronous) <input type="checkbox"/> Online Learning (2 Synchronous+1 Asynchronous)	

Second: Instructor's Information

Name:	Academic Rank:	
Office Number:	Ext. Number:	E-mail:
Office Hours:		

Third: Course Description

This course teaches the basics of modern chemistry. It covers the following topics: atomic masses and molecular masses, the mole concept, chemical reactions and stoichiometry, acid-base reactions, oxidation-reduction reactions, metathesis reactions, ideal gas law, properties and reactions of gases, electronic configuration of elements, the periodic properties of the elements, types of chemical bonding and the theories of bonding.

Fourth: Learning Source

Main Reference:	General Chemistry	
Author: Zumdahl	Issue No.: 9th	Publication Year: 2013
Additional Sources & Websites:	<ul style="list-style-type: none"> • <i>General Chemistry, the essential concept, 9th ed. , Chang</i> • <i>Power point on Moodle</i> 	
Teaching Type:	<input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Laboratory <input type="checkbox"/> Workshop <input checked="" type="checkbox"/> MS Teams <input checked="" type="checkbox"/> Moodle	

Fifth: Learning Outcomes

Course Code	Course Intended Learning Outcomes (CILOs)	Connection To Program ILOs Code
Knowledge		
*K1	Define the scientific method and its steps	PK1
K2	Know accuracy, precision, and types of errors	PK2
K3	Apply naming rules (nomenclature) to name simple inorganic compounds	PK3
K4	Define the atomic mass, mole concept, Avogadro's number	PK4
K5	Define the aqueous solution, and the molar conc.	PK5
		PK6
K7	Recognize the different types of gas laws	PK7
K8	Recognize Dalton's law, and effusion and diffusion of gases	PK8
K9	Write the electronic structure of the atoms	PK9
K10	Know the characteristic properties of elements and trends within the periodic table	PK10
Skills		
*S1	Use the scientific approach in solving problems	PS1
S2	Use the dimensional analysis to convert between units	PS2
S3	Ability to distinguish between precision and accuracy	PS3
S4	Convert between moles, molar mass and Avogadro's no.	PS4
S5	Calculate the empirical formula from different aspects	PS5
S6	Write and balance chemical equations	PS6
S7	Apply mathematics to solve stoichiometric problems	PS7
S8	Calculate the molar conc. of aqueous solution	PS8

S9	Solve stoichiometric problems in aqueous solution	PS9
S10	Use the ideal gas law to calculate gas stoichiometry, density, molar mass	PS10
S11	Apply the principles of quantum mechanics to describe the electronics structure of atom	PS11
S12	Correlate between the position of the atoms in periodic table with periodic trends and atomic properties	PS12
Competences		
*C1	Communicate effectively both orally and written	PC1
C2	Work independently and collaborate effectively with other people	PC2
C3	Acquire problem solving skill	PC3
C4	Self-evaluate their own learning progress	PC4

* P: Program, **K: knowledge, ***S: skills, ****C: competencies.

Sixth: Course Structure

Lecture Date	Intended Teaching Outcomes(ILOs)	Topics	Teaching Procedures*	Teaching Methods***	References ***
		Introduction and instructions	Face-to-Face	Lecture	
	K1, S1, C1	Introduction of scientific method , classification of matter	Face-to-Face	Lecture	1-8
	K1, S1, C1	classification of matter Worksheet	Asynchronous	Recorded lecture, worksheet, (moodle)	6-8
	K2, C1, C2, C3, C4	Physical & chemical properties	Face-to-Face	Lecture	8-18
	S2, C1, C3	units of measurements Scientific notation	Face-to-Face	Lecture	20-25
	S2, C1, C3	Scientific notation Worksheet	Asynchronous	Recorded lecture, Worksheet , (moodle)	22-25
	S2, C1, C3	Uncertainty	Face-to-Face	Lecture	26-30
	S2, C1, C3	Significant figure	Face-to-Face	Lecture	26-30
	S2, C1, C3	Units of lab measurements Worksheet	Asynchronous	Recorded lecture , worksheet (moodle)	30-32
	S2, C1, C3	Dimensional analysis	Face-to-Face	Lecture	32-35

	K3,C1,C2,C4	Naming simple compounds	Face-to-Face	Lecture	40-45
	K3,C1,C2,C4	Naming simple compounds Quiz1 chapter (1)	Asynchronous	Recorded lecture Quiz1 (moodle)	40-45
	K3,C1,C2,C4	Naming simple compounds	Face-to-Face	Lecture	45-50
	C2, C3, C4	Atomic mass and isotopes	Face-to-Face	Lecture	55-60
	C2, C3, C4,S4,S5	Mole concept and Avogadro' number Worksheet	Asynchronous	Recorded lecture, Worksheet (moodle)	60-62
	K4,C2, C3, C4,S4,S5	Molecular mass and mass percentage	Face-to-Face	Lecture	62-68
	C2, C3, C4,S4,S5,K4	Determining the empirical formula of compound	Face-to-Face	Lecture	69-75
	S5, C2,C3	Determining the molecular formula of the compound	Face-to-Face	Lecture	75-80
	K4,C1,C3,S6	Balancing Chemical Equations	Face-to-Face	Lecture	81-85
	S7, C1	Stoichiometric calculations Quiz 2 HOMEWORK 1	Asynchronous	Recorded Lecture + Quiz 2 (moodle) HOMEWORK 1	86-88
	S7, C2, C3, C4	Calculation involving a limiting Reagent, percent yield	Face-to-Face	Lecture	89-92
	S8, C1, C3,K5	Water, the common solvent, Types of solutions, Molarity	Face-to-Face	Lecture	93-102
	S7, C2, C4, K6	Precipitation reaction Worksheet	Asynchronous	Recorded Lecture, Worksheet (moodle)	102-108
	S8, C1, C3,K6	Acid-base reaction	Face-to-Face	Lecture	108-112
	S9, C1, C3	Redox reaction	Face-to-Face	Lecture	113-118
	S9, C2, C3,C4	Redox-reaction, HOMEWORK 2	Asynchronous	Recorded Lecture (moodle)	118-120

				HOMWORK 2	
	K7,C1,C3	Gases properties and pressure	Face-to-Face	Lecture	113-140
	K7,C1,C3	Gases laws	Face-to-Face	Lecture	140-144
	K7,C1,C3	Gases law Worksheet (Gases)	Asynchronous	Recorded Lecture (moodle) Worksheet	
	S10, C1,C3	Gas Stoichiometry	Face-to-Face	Lecture	145-146
	K8,C1,C3	Dalton's law and diffusion	Face-to-Face	Lecture	148-156
	K8,C1,C3	Dalton's law and diffusion Quiz 3	Asynchronous	Recorded Lecture, Quiz 3 (moodle)	148-156
	C3,C4	Introduce Electromagnetic Radiation and The Nature of Matter.	Face-to-Face	Lecture	156-158
	C1, C3 ,K9,S11	Describe the quantum mechanical model of the atoms and quantum numbers	Face-to-Face	Lecture	158-164
	S11,C1	Quantum numbers HOMWORK 3	Asynchronous	Recorded Lecture (moodle) HOMWORK 3	162-164
	C1, C3,S11	Use Aufbau principle to determine the electron configuration of elements.	Face-to-Face	Lecture	164-178
	S12,C3,C4 K10,C1	Highlight periodic table trends	Face-to-Face	Lecture	189-192
	K10,C1,C3,S12	Types of chemical bonds, Electronegativity HOMWORK 4 Quiz 4	Asynchronous	Recorded Lecture, (moodle) HOMWORK 4 Quiz 4	192-202
	S12,C2, C3,C4	Bond polarity and Dipole Moments.	Face-to-Face	Lecture	203-206
	S12,C2, C3,C4	The Ions: electron configurations, size,	Face-to-Face	Lecture	210-211

		formula			
	C1,C4	Revision	Asynchronous	Recorded Lecture (moodle)	

* Learning procedures: (Face-to-Face, synchronous, asynchronous). * * Teaching methods: (Lecture, video.....). * * *
Reference: (Pages of the book, recorded lecture, video....).

Seventh: Assessment methods

Methods	Online Learning	Blended Learning	Face-To-Face Learning	Measurable Course (ILOs)
First Exam	0	0	0	
Second Exam	0	0	0	
Mid-term Exam	0	30	0	
Participation	0	0	0	
Asynchronous Activities	0	10	0	
4 Quizes		10		
4 Homework				
Final Exam	0	50	0	

Eighth: Course Policies

- All course policies are applied on all teaching patterns (online, blended, and face-to-face Learning) as follows:
 - Punctuality.
 - Participation and interaction.
 - Attendance and exams.
- Academic integrity: (cheating and plagiarism are prohibited).

Approved by:	Name	Date	Signature
Head of Department			
Faculty Dean			