

1-Basic information

Course Code	CHM:1106
Course title	General Chemistry
Academic year	First year student, 2018/2019
Program title	B. Sc. Veterinary Medical sciences
Contact hours/ week	: (Lec. 2h/week, Prac. 2h/week)
Date of specification approval	

2-Professional information

This course aims to:

- 1- Determine the characters of hydrocarbons (alkanes, alkenes, and alkynes), their characters, their applications, and the different function groups and nomenclature of organic compounds.
- 2- Interpret data related to general chemistry (molecular orbital theory, resonance, overlap of atomic orbitals, electronic structure of atoms).
- 3- Analyze the data to detect the functional group, acidic and the basic radicals of the compounds.
- 4- Provide students with the skills of self-learning, working in group and time management.

3- Intended learning outcomes of course (ILOs)

a-Knowledge and understanding:

By the end of this course the student should be able to:

- a1-Identify the different classes of organic compound, function group, acidic radical and basic radical.
- a2-Mention the characters of alkanes, alkenes, alkynes, different function groups and types of isomerism.
- a3-List the electronic structures of different atoms, electronic energy levels and electronegativity.
- a4-Identify the forms of studied AO's (s, p, d & f), chemical bonding, Lewis structures, formal charges, and oxidation numbers.

b-Intellectual skills

By the end of this course the student should be able to:

- b1- Compare between common and IUPAC names of hydrocarbons and organic compounds.
- b2- Apply IUPAC rules for nomenclature of aliphatic and aromatic organic compounds.
- b3- Interpret electronic structures of atoms, chemical bonding, acidic and basic radicals , lewis structures , formal charges, and oxidation numbers.

c- Professional and practical skills

By the end of this course the student should be able to:

- c1- Demonstrate the difference between acidic radical and basic radical .
- c2- Illustrate the behavior of each function group.
- c3- compare between different state of atoms

d-General and transferable skills

By the end of studying the course, the student should be able to:

- d1. Work in a group and learn time management.
d2. Prepare short report using internet and library.

4-Topics and contents

Course	Topics	No. of hours	Lectures	Practical
General chemistry 2h/w	Electronic structures of atoms	2	1	-
	Chemical periodicity.	2	1	-
	Chemical bonding	2	1	-
	Trends of atomic properties in the P.T.	2	1	-
	Mid term exam & revision	2	1	-
	Lewis structures	2	1	-
	Formal charges & oxidation numbers	2	1	-
	Molecular orbital theory	2	1	-
	assignments	2	1	-
Organic chemistry 2 h / week	Introduction to common and UPAC systematic approach to nomenclature.	2	1	-
	IUPAC rules for alkenes and cycloalkane	2	1	-
	IUPAC rules alkene's and cycloalkene.	2	1	-
	IUPAC rules for alkyne's nomenclature.	2	1	-
	Mid term exam	2	1	-
Practical inorganic chemistry lab 2 h/w	What is analytical chemistry, Data handling, What is qualitative analysis.	2	-	1
	Acidic Radical			
	(i)First group	2	-	1
	(ii)Second group	2	-	1
	(iii)Third group	2	-	1
	Scheme for acidic radical	2	-	1
	Basic group			
	(i) First group	2	-	1
	(ii) Second group	2	-	1
	(iii) Third group	2	-	1
	(iv) Fourth group	2	-	1
	(v) Fifth group	2	-	1
	(vi) Sixth group	2	-	1
	Scheme for basic radical	2	-	1
Revision	2	-	1	
Practical organic chemistry lab 2 h/w	What is organic chemistry, Data handling, What is qualitative analysis.	2	-	1
	Carbohydrates	2	-	1
	Scheme for identification of organic cpds	2	-	1

d learning methods

- (1)Lectures (Mind mapping, brain storming and think-pair share learning style (Data show and board).
(2)Library visit, Lab works, Home works and exercises.

6-Teaching and learning methods for the students with disabilities

Office hours and special meeting

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Mid-term exam	a1, a3	b1, b2, b3		-
Practical exams	a2	b1	c1,c2	-
Final exams	a1-a4	b1-b3		-
Student activity	a1	b3		d1-d2

7.2-Assessment schedules/semester

Method	Week(s)
Practical exams	14, 15
Final exams	managed by administrations
Student activity (Essay)	1-13

7.3-Weight of assessments

Assessment	%	Allocated Mark		
		1 st Semester	2 nd Semester	Total
Practical exams	40	40	-	30
Final exams	50	50	-	60
Student activity	10	10	-	5
Total	100%	100%	-	100%

7- List of references

7.1.Nots and books

- Departmental notes on : hand out

7.2.Essential books:

- J.B.Umland and J.M. Bellama "General Chemistry", 6 ed. Brooks/Cole Publishing Company, 1996.

7.3. Recommended texts

- J.B.Russell," General Chemistry", McGraw-Hill International Book Company, 1981.
- R.D.Braun" Introduction to chemical analysis" , 1983, McGraw-Hill, Book Company, Japan

7.4.Journals , Websitesetc

Journals:

Websites:

www.sciencedirect.com

www.chemweb.com

Course Coordinator

Prof. Dr/ S.M.Sayyah Prof.Dr/M.M. Khaliel

Head of Department

Course	Topic	Week	Intended learning outcomes of course (ILOs)			
			K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
General chemistry 1h/w	Electronic structures of atoms	1	a3	b3		-
	Chemical periodicity.	2	a3,a4	b3		-
	Chemical bonding	3,4	a3	b3		-
	Trends of atomic properties in the P.T.	5, 6	a3	b3		-
	Mid term exam	7	a1,a3	b3		-
	Lewis structures	8, 9	a4	b3		-
	Formal charges & oxidation numbers	10, 11	a4	b3	c3	-
	Molecular orbital theory	12, 13	a4	b3		-
	assignments	14	a3,a4	b3		-
Organic chemistry 1h/w	Introduction to common and UPAC systematic approach to nomenclature.	1	a1	b1		-
	IUPAC rules for alkenes and cycloalkane	2, 3	a1	b1,b2		-
	IUPAC rules alkene's and cycloalkene.	4, 5	a1,a2	b1,b2		-
	IUPAC rules for alkyne's nomenclature.	6	a1,a2	b1,b2		-
	Mid term exam & revision	7	a1,a2	b1,b2		-
	IUPAC rules for aromatic ring substitution nomenclature.	8	a1,a2	b1,b2		-
	IUPAC rules for alcohol and ether	9	a1,a2	b1,b2		-
	IUPAC rules for aldehyde and ketones	10	a1,a2	b1,b2		-
	IUPAC rules for carboxylic acids.	11	a1,a2	b1,b2		-
	IUPAC rules for carboxylic acid derivative.	12	a1,a2	b1,b2		-
	IUPAC rules for amines amine salt and types of isomerism	13	a1,a2	b1,b2		-
	R, S- system, geometrical, and conformational isomerism (enantiomers, and distreomers).	14	a1,a2	b1,b2		-
Practical inorganic chemistry lab 2 h/w	What is analytical chemistry, Data handling, What is qualitative analysis.	1			c1	d1,d2
	Acidic Radical , (i)First group	2			c1	d1
	(ii)Second group	3			c1	d1
	(iii)Third group	4			c1	d1,d2
	Scheme for acidic radical	5			c1	d1
	Basic group ,				c1	d1
	(vii) First group	6			c1	d1
	(viii) Second group	7			c1	d1,d2
	(ix) Third group	8			c1	d1
	(x) Fourth group	9			c1	d1
	(xi) Fifth group	10			c1	d1
	(xii) Sixth group	11			c1	d1
	Scheme for basic radical	12			c1	d1,d2
Revision	13			c1	d1	
Basic chem	What is organic chemistry, Data handling, What	1			c2	d1

	is qualitative analysis.					
	Element test, hydrocarbon	2,3 4			c2 c2	d1 d1
	Alcohols	5			c2	d1
	Aldehyde	6			c2	d1
	Ketones	7			c2	d1
	Acids	8			c2	d1
	Acid salts	9			c2	d1
	Carbohydrates	10			c2	d1
	Scheme for identification of organic cpds	11			c2	d1,d2
	Revision	12			c2	d1,d2