



Department ofFood Technology

College of ...Agriculture

University ofSalahaddin

Subject: ...Organic Chemistry

Course Outline– *Second year-1st semester*

Lecturer's name Assist.Prof.Dr. Safea Sabir Taha (PhD)

Academic Year: 2017/2018

Course Book

1. Course name	Organic chemistry
2. Lecturer in charge	Assist.Prof. Dr. Safea Sabir Taha
3. Department/ College	Food Technology/ Agriculture
4. Contact	e-mail: Safea.Taha@su.edu.krd Tel: (optional)
5. Time (in hours) per week	Theory: 2 Practice : 6
6. Office hours	Availability of the lecturer to the student during the week 6
7. Course code	
8. Teacher's academic profile	<p>PROFESSIONAL EXPERIENCES</p> <p>* 1- B. Sc. In Biochemistry science/science college – Univer.of Baghdad in 1975</p> <p>2- M. Sc. In Organic Chemistry science/science college – Univer. of Salahhadin in 2001</p> <p>Thesis title (<i>Synthesis and Spectroscopic Studies of some Coumarin -3-Carboxylic Acid Compounds by Ultrasonic Promoted Knoevenagel Reaction</i>)</p> <p>3- Ph. D. In Petroleum Chemistry science /scientific educational college– Univer. of Salahadin in 2007</p> <p>Thesis title (<i>Evaluation of Crude Oil and its Products of Tawke Well in Zakho-Kurdistan Region and Gasoline Octane Number Improvement by Some Additives</i>)</p> <p>Undergraduate Students</p> <p>1. Organic Chemistry 2. Biochemistry</p> <p>3. Physical Chemistry 4. Inorganic chemistry</p> <p>5. Analytic chemistry</p>

Postgraduate Students

1. Food Physics 2. Food pigments 3. Bio polymer

Sciential degrees

1- Scientific Researcher

2- Assistant Lecturer 2003-2007

3- Lecturer 2007-2012

4- Assistant Professor 2012 till now

Scientific and Office works

There isn't any office work

Supervised and Researches

* Published more than 5 scientific researches in several scientific Journals

* Supervised on 1 master thesis and 1 Diploma Thesis in industrial chemistry.

*Contributed as a member or supervisor for 6 examination committee for discussion master and two Ph.D. thesis.

* Supervised on more than 18 research projects at the end stage of undergraduate student.

The Conferences Contrib

1. The first international scientific conference of Cihan University – Erbil, May, 20-21, 2014.

2. The 5th international scientific conference of Eshik university – Erbil April 13-14, 2014

3. 2nd Scientific conference of garmian university 6,7 -2015

	<p><u>Periods</u></p> <p>1-Preperation period for assistant Lab., M.Sc. students & M.Sc. teachers chemists deals with the chemical Safety & security in Agriculture College for all Depts in Salahadin Univer. 15/9/2012 for two weeks..</p> <p>2- Preperation period for assistant Lab., M.Sc. students & M.Sc. teachers chemists deals with the chemical Safety & security in Agriculture College for all Depts in Salahadin Univer/Hawler. 15/9/2014 for two weeks.</p> <p><u>Committees</u></p> <p>1- Contributed as a member of elevation scientific degree committee in college of Agriculture departs/Univer. of Salahadin- Hawler to determine scientific grade in no.352 at10/11/2014.</p> <p>2- Contributed as a member of elevation scientific degree committee in college of Agriculture departs/Univer. of Salahadin- Hawler to determine scientific grade in no.4452 at14/12/2015. .</p> <p>3-Head of chemical consolidation committee in college of Agriculture departs./Univer. of Salahadin-Hawler since 2013.</p> <p>4-Member of scientific committee depart. of Food Technolog/college of Agriculture/Univer. of Salahadin-Hawler from 2009-2014.</p> <p>5. Member of Higher Education committee depart. Of Food Technolog / college of Agriculture/Univer. of Salahadin- Hawler since 2009.</p>
9. Keywords	This course is a natural continuation of a course in organic chemistry, but the material is

more focused. The basic goal is to establish a connection between different families of organic compounds through their activities inequalities and feasible region. Some topics are hydrocarbon compounds like alkanes ,alkenes, & alkynes, besides to the cycloalkane & aromatic compounds,with their preparation & chemical reactions, also some knowledge about alcohol, ketone, aldehydes & carboxylic acids .

10.

The more general objective of this course is to continue providing a deeper understanding and working knowledge of organic chemistry, while in the process strengthening analytical skills increasing student's ability to communicate organic compounds structurally and orally, making them comfortable with reading and understanding different organic compounds on their own and continuing to develop their appreciation for abstract organic chemistry.

11. Course objective:

The topics listed in the syllabi will be covered in the lectures. The students will be asked to study all topics in the lectures at home. To get the best of the course it is suggested that the students attend classes as much as possible. Lectures note, are for supporting not for submitting the reading material try as much as possible to participate in classroom preparing the assignments given in the course.

12. Student's obligation:

Students role is very crucial in this course. They need to spend some time in solving and understanding the main concepts.

13. Forms of teaching

We will use datashow & the board in this course. The board is an old fashioned method of teaching the chemical structure of organic compounds, and followed in most of well known universities.

<p>14. Assessment scheme</p> <p>1. Two tests (2 x 3%). 2% for active participation and attendance. for 20% of the term mark the annual striving in 25% theory .</p> <p>2. Final examination 60%(40% theory & 20% practice).</p> <p>3. If the student couldn't secure a minimum of 50% for the term and final examination to pass the course, they are given a chance to repeat the final examination in September.</p>	
<p>15. Student learning outcome:</p> <p>The students will learn some concepts in this new field of organics. It will be useful once the pursue a postgraduate degree</p>	
<p>16. Course Reading List and References:</p> <ul style="list-style-type: none"> • Morrison and Boyd, Organic Chemistry, 4th. Allyn and Bacon, Inc. (1984). • R.O. Norman, Principles of Organic synthesis , Methuen & Co Ltd and Science Paperbacks 1972. • Francis A. Carey, Organic Chemistry Sixth Ed. (2006) 	
<p>17. The Topics:</p> <p>In this section the lecturer shall write titles of all topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture</p> <p>Each term should include not less than 16 weeks</p>	<p>Lecturer's name</p> <p>Lecturer's name 3 hrs.</p>
<p>18. Practical Topics (If there is any)</p> <p>In this section The lecturer shall write titles of all practical topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture</p>	
<p>19. Examinations:</p> <p>The exams will be a combination of solving problems and explaining certain ideas of the course</p> <ul style="list-style-type: none"> • Quizzes 5%. • Examinations will be given, 20%. • Final exam 60%. 	
<p>20. Extra notes: None</p>	
<p>21. Peer review ول ھه و پيداچوونه</p>	

Syllabus of organic chemistry

No.	Title of the subject
Week 1	Org.Chem. definition ,electronic configuration of carbon atom , orbital bonding in molecules, Ionic bond, covalent bond & polar bond ,molecular orbital bonding formation of H ₂ gas .
Week 2	Hybridization of orbitals ,sp ,sp ² , sp ³ , classification of organic compounds, Hydrocarbons structural & molecular formula,homologous series.
Week 3	Functional groups , structural isomerism , alkanes general information,physical properties
Week 4	Preparation of alkanes , alkane reactions , cyclic alkanes , HCs & cycloalkane solvents
Week 5	Nomenclature , preparation of cyclic alkanes , petroleum , composition , fractional distillation , octane number & its improvements.
Week 6	Alkenes Nomenclature ,Natural source ,preparation / dehydration of alcohol , carbonium ion stability, dehydrohalogenation of alkyl halides.
Week 7	Reaction of double bond/ addition reaction , catalytic hydrogenation , halogenation addition ,markonikov's rule, peroxide effect. Ozonolysis, polymerization, geometrical isomerism , alkynes , nomenclature
Week 8	Examination + discussion.
Week 9	Preparation, hydrogenation , reaction of alkylhalide with acetylide ,triple bond reaction: hydrogenation & halogenations
Week 10	Addition reaction of water, combustion , tautomerism , aromatic hydrocarbons
Week 11	Resonance ,electrophilic aromatic substitution reaction,halogenations , nitration & sulfonation.
Week 12	
Week 13	
	Friedel-craft's reactions , halides , nomenclature , Halide reactions,SN ¹ & SN ² reactions.
	Elimination reactions E ¹ & E ² , aldehydes & ketones , nomenclature

Week 14	and their physical and chemical properties
Week 15	Carboxylic acids physical properties & chemical reactions . Examination + discussion.

Patterns of questions