

مواصفات المقرر كيمياء عضوية I

- البرنامج الذي يقدم المقرر من خلاله (إعداد معلم الكيمياء)
- يمثل المقرر عنصرا (رئيسيا) بالنسبة للبرنامج
- القسم العلمي المسئول عن البرنامج (متعدد)
- القسم العلمي المسئول عن تدريس المقرر (قسم الكيمياء)
- السنة الدراسية / المستوى (الفرقة الثانية عام . شعبة الكيمياء / الفصل الدراسي الأول)
- تاريخ اعتماد توصيف البرنامج (2005/5/11 م)

بيانات أساسية

Basic Data

- (1) Course Title: Organic Chemistry I (Functional group in organic Compounds I).
(2) Course Code No.: 211 ch
(3) Credit Hours: four credit hours
Lectures: 2 credit hours
Lab.: 2 hours
Total hours: 4 credit hours

بيانات مهنية

Professional Data

1) General goals of the course

(1) الأهداف العامة للمقرر

- The course is designed to help student-teachers achieve the following goals:
 - Discuss the concept of the structure of functional groups in hydrocarbon derivatives.
 - Assign common and IUPAC names to alkyl halides, aryl halide, alcohols, phenols, aldehydes, ketones, and ethers.
 - Define the relationship between the functional group and characteristic chemistry exhibited by organic molecules.
 - Distinguish between differences and similarities of reactions of alkyl and arylhalides, alcohols and phenols, ethers, aldehydes and ketones.
 - Differentiate between effect of aliphatic and aromatic hydrocarbons on the chemistry of characteristics functional groups.

2) Operational learning objectives of the course

(2) الأهداف الإجرائية للمقرر

By the end of this course, student teachers are expected to achieve the following objectives:

A) Knowledge and Comprehension:

(أ) المعرفة والفهم:

A-1 Develop an understanding and appreciation for the nature of scientific inquiry.

A-2 Visualize chemistry as the study of the composition, structure, properties, reactions of matter, and the dynamic interrelations of matter.

- A-3 Deduce chemical and structural formulas of organic compounds.
- A-4 Describe differences between and similarities of reactions of alkyl and aryl halides, alcohols and phenols, aldehydes and ketones.
- A-5 Differentiate the carbonyl group in aldehydes and ketones, and hydroxyl group in alcohols and phenols.
- A-6 Correlate between structure of water with alcohols, phenols, and ethers.
- A-7 Compare the effect of alkyl and aryl groups on the chemistry of characteristics functional groups.
- A-8 Define the electrophilic and nucleophilic substitution and addition reactions.
- A-9 Classify alcohols and amines according to their structures and properties.
- A-10 Explain the uses of Grignard reagents in organic syntheses.
- A-11 Differentiate and compare between carbonyl group reactivity in aldehydes and ketones.
- A-12 Explain the role of functional groups on the reactivity of organic compounds.
- A-13 Hold comparisons between chemical properties and different classes of alcohols.
- A-14 Elucidate the mechanism of electrophilic substitution in phenols.

B) Cognitive Skills:

(ب) المهارات العقلية:

- B-1 Relate the properties of different organic compounds to their structures.
- B-2 Relate the concepts of chemistry to contemporary, historical, technological, and societal issues; in particular, relate concepts of chemistry to current controversies, such as those around energy uses and medical research, as well as other issues.
- B-3 Demonstrate competence in the practice of teaching as defined within the Entry-Level Standards

- B-4 Visualize the chemistry of Grignard reagent in organic syntheses.

C) Practical Skills:

(ج) المهارات العملية:

- C-1 Locate resources, design and conduct inquiry-based open-ended investigations in chemistry, interpret findings, communicate results, and make judgments based on evidence.
- C-2 Demonstrate competence in the practice of teaching through investigative experiences and by demonstrating the application of the scientific process and assessing student learning through multiple processes.
- C-3 Acquire basic lab skills in qualitative elemental analysis of organic compounds, preparation of simple organic compounds.
- C-4 Synthesize, purify, and identify functional groups and organic compounds experimentally.
- C-5 Acquire hands on practical skills.

D) Enabling Skills:

(د) المهارات العامة والمنقولة:

- D-1 Construct new knowledge for themselves through research, reading and discussion, and reflect in an informed way on the role of organic chemistry in human affairs.
- D-2 Apply scientific skills in his life.

Contents

المحتويات

	Week	Topic	Lectures	laboratory	Total
First		<u>Functional Groups in Organic Compounds (I)</u> <u>1. Halogenated organic compounds</u> : Alkyl halides and Aryl Halides	2	2	4
Second		Structure,	2	2	4
Third		classification	2	2	4
Fourth		nomenclature.	2	2	4
Fifth		properties.	2	2	4
Sixth		preparation and Industrial sources and uses.	2	2	4
Seventh		<u>2. Oxygenated Organic compounds I</u> : Alcohols, Phenols.	2	2	4
Eighth		Ethers, Aldehydes and ketones,	2	2	4
Ninth		Structure, classification.	2	2	4
Tenth		nomenclature properties, preparation.	2	2	4
Eleventh		reactions, industrial sources and uses.	2	2	4
Twelfth		<u>Laboratory:</u> Synthesis and identification of simple organic compounds related to the studied topics.	2	2	4
Thirteenth		Separation and purification of some organic compounds	2	2	4

Activities, tasks and assignments:

أساليب التعليم والتعلم

- Solves and discusses problem sets.
- Submission and class presentation of term papers.
- Computer aided and web based assignments and assessment.
- Laboratory work, group discussions, and reports on: synthesis and

identification of simple organic compounds.

- Visits to relevant industrial plants and submissions of subsequent reports.
- Molecular modeling to elucidate organic compounds and related structure – property – chemical reactivity relationships.

Assessment and Evaluation tools:

أساليب التقييم

- Final exam

- Oral assessment.
- Assessment of term paper, reports and group discussions.
- Quizzes
- Evaluation of performance in group projects and reports.
- Hourly and midterm exams

Summative Evaluation table

جدول التقييم

Assessment	Final exam	Fifteenth Week	الأسبوع الخامس عشر	نهاية الفصل الدراسي	التقييم
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النسبة المئوية لكل تقييم

Assessment	Score وزن الدرجة Weight	التقييم
2. Final written exam	105	1. امتحان نهاية الفصل الدراسي
3. Final oral exam	30	2. الامتحان العملي
4. assignments	15	3. أعمال فصلية
Total	150	المجموع

References:

قائمة المراجع

Students' Textbooks

(1) كتب الطالب

مذكرات المقرر

1- مذكرة من إعداد هيئة التدريس بالقسم .

2- مذكرة العمل المعدة بمعرفة قسم الكيمياء .

3- كتب مقترحة:

اسعد أسماعيل الحمداني ، الكيمياء العضوية ، ، وزارة التعليم العالي جامعة الموصل ، د.ت
أحمد عبد العزيز ياسين ، الكيمياء العضوية ، الدار الدولية للنشر والتوزيع ، 1996 م.

Periodicals and websites

(2) مجلات علمية، ومواقع الإنترنت

Journal of Chemical Education (JCE)

Journal of organic chemistry

Supplementary material

Chemical reviews.

1. www.schoolarabia.net/kemya/general_chemistry/level4/chemical_bonds/index.htm
2. www.arabic.edu-negev.gov.il/husam
www.byto.com.com/vb/showthread.php?t=5599

Resources

الامكانات المطلوبة للتعليم والتعلم

- References
- Chemistry library
- Textbooks
- Handouts and problem sets.
- Electronic, web, and multimedia based resources.
- Lab work.

Course coordinator:

• منسق المقرر: د محمد عبد اللطيف

Head of the Department:

• رئيس القسم: أ.د مدحت شاكر

Date:

• التاريخ: 2005/5/11م



رؤية الكلية: انطلاقا من رؤية جامعة الإسكندرية تسعى كلية التربية بدمنهور إلى تحقيق الجودة والحصول على الاعتماد الأكاديمي لتحتل مكانة متميزة بين كليات التربية على المستوى القومي و العالمي (مجلس الكلية ، 8 مارس 2009) .

رسالة الكلية: إعداد المعلمين والكوادر المؤهلة القادرة على تطوير النظم التعليمية والإدارية بالتعليم العام والفني ، والباحثين القادرين على تطوير