

مواصفات مقرر كيمياء عضوية II

- 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 الثاني)
- تاريخ اعتماد توصيف البرنامج ()

Basic Data

بيانات أساسية

1. Course Title: Organic Chemistry II (Functional groups in organic Compound II
2. . Course Number: 223
3. Number of Hours:
Lectures: 2 credit hours
laboratory: 4 credit hours & rec: 2 credit hour
Total hours: 8 credit hours
3. prerequisites : 221 ch Core quisities :

Professional Data

بيانات مهنية

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 structure of carboxylic acids and their derivatives, and amines.
 - Assign Common and IUPAC names to carboxylic acids and their derivatives, and amines.
 - Relate the properties of amines and amides to their structure.
 - Define the relationship between the functional group and characteristics chemistry exhibited by organic molecules.
 - Correlate between the properties preparation , and chemical reactions of carboxyl acids and their derivatives.
 - Define the effect of hydroxyl group in the carboxyl group on the reactivity of the carbonyl group.
 - Define the applications of organic compounds in industry (dyes,biochemical, polymers, etc).
 - Correlate between structure of amines and their reactions.

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 Explain and outline the structure nomenclature, classification, synthesis, and reactions of carboxylic acids.

A-2 Compare between the K_a values for different carboxylic acids.

A-3 Draw the structure nomenclature, classification, synthesis, and reactions of carboxylic acid derivatives.

A-4 Explain and outlines the structure nomenclature, classification, synthesis and reactions of amines.

A-5 Classify types of polymers and elucidate the different synthetic method employed.

B) Cognitive Skills:

(ب) المهارات العقلية:

B-1 Relate the properties of different organic compounds to their structures.

B-2 Correlate structure with properties and uses of polymers

B-3 Demonstrate competence in the

B-4 Visualize the Role of Functional groups in organic Compounds.

C) Practical Skills:

(ج) المهارات العملية:

C-1 Purify, and identify functional groups in organic compounds experimentally.

C-2 Acquire basic lab skills in qualitative elemental analysis of organic compounds, preparation of simple organic compounds.

C-3 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 (II)</u>	2	2	4
Second		<u>Oxygenated Organic Compounds:</u> Carboxylic acids, Dicarboxylic Acids, Carboxylic Acid derivatives (Esters, Acid Chlorides, Anhydrides , Amides),	2	2	4
Third		Carboxylic Acids : Structure, nomenclature, properties,	2	2	4
Fourth		Carboxylic Acids : preparation , reactions , industrial sources and uses.	2	2	4
Fifth		<u>Nitrogenated Organic Compounds:</u> <u>Aliphatic and Aromatic Amines:</u> Structure, classification, basicity , nomenclature	2	2	4
Sixth		properties , preparation , reactions, industrial sources and	2	2	4
Seventh		<u>Dyes:</u> synthesis, properties, industrial synthesis and uses.	2	2	4
Eighth		<u>Sulfa Drugs:</u> Sulfonation of amines and sulfonamides. Macromolecules Chemistry	2	2	4
Ninth		<u>Sulfa Drugs:</u> Sulfonation of amines and sulfonamides. Macromolecules Chemistry	2	2	4
Tenth		<u>Polymers and Polymerization:</u> Synthesis, of different types of polymers,	2	2	4
Eleventh		relationship between structure and property,	2	2	4
Twelfth		polymers in industry and uses. (Polyethylene, polypropylene, polyvinyl chloride, polystyrene, polyester, etc.)	2	2	4
Thirteenth		Development and properties of polymers (Thermoset polymer and thermoplastic polymer)	2	2	4

Laboratory: Synthesis and identification of some organic compounds related to the studied topics.

Activities, tasks and assignments:

أساليب التعليم والتعلم

- Solves and discusses problem sets.
- Submission and class presentation of term papers.

- Visits to relevant industrial plants and submission of subsequent reports
- Molecular modeling to elucidate organic compounds and related structure- property- chemical reactivity relationships.
- Computer aided and web based assignments and assessment.
- Laboratory work, group discussions, and reports on: preparation, separation , purification , and identification of some binary mixtures of organic compounds.

Assessment and Evaluation tools:

أساليب التقييم

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

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 السنة
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.

Resources

الإمكانات المطلوبة للتعليم والتعلم

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

Course coordinator:

Head of the Department:

Date:

• منسق المقرر:

• رئيس القسم:

• التاريخ:



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