



ASU  
جامعة العلوم التطبيقية الخاصة  
APPLIED SCIENCE PRIVATE UNIVERSITY



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جامعة كل العرب

Faculty of Arts and Science  
Course Syllabus  
Semester Second  
Academic Year 2021/2022

Course Title:	Organic Chemistry lab1
Course No.:	1722202
Prerequisite:	1722201
Concurrent:	1722301
Department:	Chemistry Department
Coordinator:	Nawal Bahtiti

**\*Instructor:**

Name	Office Number	Office Phone	Office Hours	E-mail
Nawal Bahtiti	2017	1103	Su. Tu. Thu 10.0-13.0 Mon. 11-12	<a href="mailto:Nawal_h@asu.edu.jo">Nawal_h@asu.edu.jo</a>

**\* Course Description:**

Practical Organic Chemistry I course 1722202 introduces the student to basic techniques and procedures in purification, and characterization of organic compounds. Use melting point of a substance as a means of identification and to determine a substance's purity. Purify a substance in a mixture using the process of recrystallization. Distinguish solubility and miscibility properties of organic compounds based on functional group and carbon chain length. Safely assemble and use the appropriate distillation apparatus to carry out simple and fractional distillation, and explain the differences between the two types of distillation. Use extraction and recrystallization to purify caffeine from tea. Conduct simple reactions used in the organic chemistry laboratory. The student will also be trained in the proper way to write a scientific laboratory report.

**\* Learning Outcomes:**

Successful completion of this course should lead to the following learning outcomes:

**A-Knowledge and Understanding:**

- A1) Be able to understand the basic concepts of *tests of identification*
- A2) Be able to understand the basic concepts of *separations*

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A3) Be able to understand the basic concepts of *functional groups*

A4) Understand concepts of preparations of chemical reactions.

#### **B-Intellectual Skills:**

B1) Distinguish chemical techniques for separations and purifications

B2) Analyze and compare the different applications requirements

#### **C-Subject Specific Skills:**

C1) Implement solution of test purity.

C2) Implement solution of separations

C3) Learn how to implement applications of organic chemistry.

#### **D-Transferable Skills:**

D1) Homework and quizzes

D2) Experiments

D3) Assignments and Reports

#### **Program Learning Outcomes (PLOs):**

1. Describe the fundamentals of chemistry including structure, reactivity and properties of chemical substances, different situation of reaction and the states of matter.
2. Construct essential facts, principles and theories across the four principal areas of chemistry, i.e., analytical, organic, inorganic and physical.
3. Align major issues currently at the frontiers of chemical research and development
4. Memorize certain knowledge in Arabic and English languages, computer science, Islamic religion
5. Differentiate between the different states of the matter, elements and compounds based on the recognition and quantification of the properties
6. Analyze chemical and spectral data to identify and confirm chemical structures as well as determine chemical composition.
7. Establish and conclude mechanisms for physical and chemical processes.
8. Demonstrate adequate life-long learning skills
9. Select appropriate techniques and procedures for chemical synthesis and analysis.
10. Interpret data derived from laboratory observations and measurements in terms of their significance and the theory underlying them.
11. Employ computational software's and data- processing skills in handling of chemical information and analysis of chemical data.
12. Assemble and use properly chemistry experimental setups
13. Perform correctly quantitative measurements requiring accurate and precise manipulations.

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\* Course Contents and Schedule:

Week	Experiments	Topics	CLOs	PLOs
First 6-3		Introduction		
Second 13-3	1	Melting points	A1.B1,C1,D1,D2,D3	1,2,3,5,6,7,8,11,12,13
Third 20-3	2	Boiling Points	A1,A2,B1,B2,C1,C2,C3.D1.D2. D3	1,2,3,5,6,7,8,11,12,13
Fourth 27-3	3	Recrystallization	A1,A2,B1,B2,C1,C2,C3.D1.D2. D3	1,2,3,5,6,7,8,11,12,13
Fifth 3-4	4	Extraction	A1,A2,B1,B2,C1,C2,C3.D1.D2. D3	1,2,3,5,6,7,8,11,12,13
Sixth 10-4	5	Steam distillation	A1,A2,B1,B2,C1,C2,C3.D1.D2. D3	1,2,3,5,6,7,8,11,12,13
Seventh 17-4	Midterm	Midterm exam		
Eighth 24-4	6	Chromatography	A1,A2,B1,B2,C1,C2,C3.D1.D2. D3	1,2,3,5,6,7,8,11,12,13
Ninth 8-5	7	Dehydration of Alcohols	A3,A4,B2,C3,D1,D2,D3	1,2,3,5,6,7,8,9,11,12,13
Tenth 15-5	8	Alky Halides	A3,A4,B2,C3,D1,D2,D3	1,2,3,5,6,7,8,9,11,12,13,
Eleventh 22-5	9	Test for Alcohols and phenols	A3,A4,B2,C3,D1,D2,D3	1,2,3,5,6,7,8,9,11,12,13,
Twelfth 29-5	10	Tests of Aldehydes and Ketones	A3,A4,B2,C3,D1,D2,D3	1,2,3,5,6,7,8,9,11,12,
Thirteen 7-6	11	Esterification of alcohols and phenol	A3, A4, B2, C3, D1, D2, D3	1,2,3,5,6,7,8,9,11,12,13
Fourteen 13-6	12	Revision		
Fifteen 20-6	Final	Final Exam		

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### \* Teaching Methods:

- Inter active lectures
- Group discussions
- Practical Experiments
- Written assignments

### \* Evaluation:

Mid Term Exam	30%
Assignments.	30%
Final Exam	40%
Total	100%

### \* Textbook :

Manual for Practical Organic Chemistry prepared by Nawal Bahtiti and Hedaya hakwati 2022

### \* References:

- 1- Organic Chemistry 2016 by Paula Bruice (8<sup>th</sup> Edition, *Pearson Publishing*)
- 2- Textbook of Practical Organic Chemistry 8th ed 2019 Vogel

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## جامعة كل العرب

**Subject Coordinator:**

**Nawal H Bahtiti**

**Head of Curriculum Committee**

**Dr. Hussam Miqdad**

**Department Head**

**Dr. Hussam Miqdad**

**Signature:**

**Signature:**

**Signature:**

**Dean Faculty**

**Dr. Hadeel Saed**

**Signature:**

**Copy to:**

Department Head.

Head of Curriculum Committee.

Course File.

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