

COURSE DESCRIPTIONS

<b>Faculty</b>	Pharmacy				
<b>Department</b>	Pharmacy	<b>NQF level</b>	7		
<b>Course Title</b>	Organic chemistry laboratory	<b>Code</b>	187115	<b>Prerequisite</b>	187114
<b>Credit Hours</b>	1	<b>Theory</b>		<b>Practical</b>	1
<b>Course Leader</b>	Dr. Abdullah Ghawanmeh	<b>email</b>	<a href="mailto:a.ghawanmeh@jadara.edu.jo">a.ghawanmeh@jadara.edu.jo</a>		
<b>Lecturers</b>	Dr. Abdullah Ghawanmeh Dr. Bara'a Jarwan Dr. Mamoun Okour	<b>emails</b>	<a href="mailto:a.ghawanmeh@jadara.edu.jo">a.ghawanmeh@jadara.edu.jo</a>		
<b>Lecture time</b>	13:00 – 16:00	<b>Classroom</b>	D105, D113		
<b>Semester</b>	Second semester 2025/2026	<b>Production</b>	2017	<b>Updated</b>	2026
<b>Awards</b>		<b>Attendance</b>	Fulltime		

**Short Description**

This lab class is divided into three parts: The first part concentrate on separation and purification techniques of some organic compounds, including crystallization, distillation and extraction. the second includes the various methods to identify the functional groups that using daily with different physical and chemical test. The third part deals with the synthesis of certain organic compounds of pharmaceutical importance.

**Course Objectives**

- 1- Familiarize students with techniques commonly used in the organic chemistry laboratory.
2. Learn how to determine the physicochemical properties.
3. Equip students with both oral and written communication skills, through practical report and written assignments and oral tasks, and through the communications that will be engaged in with lecturer, demonstrator and classmates, especially in the group laboratory work.
4. Learn hour to chemically identify functional groups in a compound.

**Learning Outcomes**

**A. Knowledge - Theoretical Understanding**

- a1. list various separation techniques and apply them on different substances. K1
- a2. outline Physical and chemical characteristics of organic compounds and identification techniques including melting point determination. K3

<b>B. Knowledge - Practical Application</b>	
<b>C. Skills – Generic Problem Solving and Analytical Skills</b>	
b1. apply general policies and safety precautions in the lab. S1	
b2. list information into a clear scientific report. S2	
<b>D. Skills – Communication, ICT, and Numeracy</b>	
b3. . develop their ability to work in teams and communicate scientific information S3	effectively
<b>E. Competence: Autonomy, Responsibility, and Context</b>	
c1.develop the knowledge from this course to use it into larger context of how to apply modern laboratory procedures and techniques to Solving problems by analyzing the information given or discovered, looking for other sources of information to apply, and looking for the scope and limitation of the context in which the problem and solution lie. C2	
<b>Teaching and Learning Methods</b>	
Lectures will be given according to the specified time and location as assigned on the academic schedule (see course information above). Lectures will be administrated using power-point presentations and will be provided to the students through JU e-learning website. Textbook is obligatory and required by the students.	
<b>Teaching duration:</b> According to the academic calendar provided at JU website.	
<b>Assessment Methods</b>	
<ul style="list-style-type: none"> <li>• Mid exam (30%)</li> <li>• assignments (20%)</li> <li>• Final Exam (50%)</li> </ul>	

Course Contents					
Week	Hours	CLOs	Topics	Teaching & Learning Methods	Assessment Methods
1.	3	a1, a2,b1, b2,c1	General instruction and safety rules And laboratory apparatus	Oral discussion, group experiments	Class participation
2.	3	a1, a2,b1, b2,b3, c1	Melting point	Oral discussion, group experiments	Class discussion, reports, quizzes and/or

					homeworks
3.	3	a1, a2,b1, b2,b3, c1	Boiling point and distillation	Oral discussion, group experiments	Class discussion, reports, quizzes and/or homeworks
4.	3	a1, a2,b1, b2,b3, c1	Recrystallization	Oral discussion, group experiments	Class discussion, reports, quizzes and/or homeworks
5.	3	a1, a2,b1, b2,b3, c1	Extraction	Oral discussion, group experiments	Class discussion, reports, quizzes and/or homeworks
6.	3	a1, a2,b1, b2,b3, c1	Chromatography	Oral discussion, group experiments	Class discussion, reports, quizzes and/or homeworks
7+ 8	3	a1, a2,b1, b2,b3, c1	Mid-Term Exam	Oral discussion, group experiments	Class discussion, reports, quizzes and/or homeworks
8+9	3	a1, a2,b1, b2,b3, c1	Organic qualitative analysis	Oral discussion, group experiments	Practical and written examination (30% of the grade).
10+11	3	a1, a2,b1, b2,b3, c1	Alcohols and phenols	Oral discussion, group experiments	Class discussion, reports, quizzes and/or homeworks
11+12	3	a1, a2,b1, b2,b3,	Aldehydes and ketones	Oral discussion, group experiments	Class discussion, reports,

		c1			quizzes and/or homeworks
13.	3	a1, a2,b1, b2,b3, c1	Carboxylic acids and Aspirin	Oral discussion, group experiments	Class discussion, reports, quizzes and/or homeworks
14	3	a1, a2,b1, b2,b3, c1	Esterification of alcohols and phenols	Oral discussion, group experiments	Class discussion, reports, quizzes and/or homeworks
15	3	a1, a2,b1, b2,b3, c1	Fats and Oils; Soaps and Detergents	Oral discussion, group experiments	Class discussion, reports, quizzes and/or homeworks
16			Final examination week	Oral discussion, group experiments	Practical and written examination (50% of the grade).

<b>Infrastructure</b>	
<b>Textbook</b>	Organic Chemistry ,8th Edition, Paula Bruice , 2019 Organic Chemistry, by McMurry9th edition, 2019
<b>References</b>	<ul style="list-style-type: none"> <li>• <a href="http://www.emedicine.com">www.emedicine.com</a></li> <li>• <a href="http://www.sciencedirect.com">www.sciencedirect.com</a></li> <li>• <a href="http://www.pubmed.com">www.pubmed.com</a></li> <li>• Lecture handouts</li> <li>• Internet: there are many websites that provide valuable data related to organic chemistry including research paper, books, animation, etc. you can find more of these websites by searching in the internet using a suitable searching key. Many websites will be posted on E-learning during the semester.</li> </ul>
<b>Required reading</b>	Textbook is obligatory and required by the students
<b>Electronic materials</b>	Provided to the students through JU e-learning website.
<b>Other</b>	In addition to the above, the students will be provided with handouts by the lecturer.

Course Assessment Plan								
Assessment Method	Grade	CLOs						
		a1	a2	b1	b2	b3	c1	
Midterm	30%	6	7	5	5	7		
Final Exam	50%	7	5	12	10	11	5	
<b>Coursework</b>								
coursework assessment methods	Assignments	20%		2	4	6	3	5
	Case study							
	Discussion and interaction							
	Group work activities							
	Lab tests and assignment							
	Presentations							
	Quizzes							
<b>Total</b>	100%	13	14	21	21	21	10	

Plagiarism	
<p>Plagiarism is claiming that someone else's work is your own. The department has a strict policy regarding plagiarism and, if plagiarism is indeed discovered, this policy will be applied. Note that punishments apply also to anyone who assists another to commit plagiarism (for example by knowingly allowing someone to copy your code).</p> <p>Plagiarism is different from group work in which a number of individuals share ideas on how to carry out the coursework. You are strongly encouraged to work in small groups, and you will certainly not be penalized for doing so. This means that you may work together on the program. What is important is that you have a full understanding of all aspects of the completed program. In order to allow proper assessment that this is indeed the case, you must adhere strictly to the course work requirements as outlined above and detailed in the coursework problem description. These requirements are in place to encourage individual understanding, facilitate individual assessment, and deter plagiarism.</p>	