

Course Plan for Bachelor Program - Study Plan Development and Updating Procedures/ Pharmacy Department	QF02/0408-4.0E
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Study Plan No.	2021/2022	University Specialization	Bachelor of Pharmacy
Course No.	0201112	Course Name	Pharmaceutical Organic Chemistry (1)
Credit Hours	3	Prerequisite *Co-requisite	General Chemistry
Course Type	☐ Mandatory University Requirement ☐ University Elective Requirement	☒ Faculty Mandatory Requirement ☐ Support course family requirements	☐ Mandatory Requirement ☐ Elective Requirement
Teaching Style	☐ Full Online Learning	☐ Blended Learning	☒ Traditional Learning
Teaching Model	☐ 1 Synchronous: 1 Asynchronous	☐ 1 Face to Face: 1 Asynchronous	☒ 2 Traditional

Faculty Member and Study Divisions Information (to be filled in each semester by the subject instructor)

Faculty Information (to be filled in each semester by the faculty member)					
Name	Academic rank	Office No.	Phone No.	E-mail	
Office Hours (Days/Time)	Sunday, Tuesday, Thursday ()		Monday, Wednesday ()		
Division number	Time	Place	Number of Students	Teaching Style	Approved Model
				Traditional Learning	2 Traditional

Brief Description

This course introduces the basics of organic chemistry in terms of structure and reactivity. A functional group approach is applied by studying the structure, nomenclature, classification, physical properties, synthesis, and reactions of one functional group at a time. The course covers the fundamentals of chemical bonding, concepts of acidity and basicity, introductory concepts to organic reactions and mechanisms, fundamentals of isomerism and stereochemistry.

Learning Resources

Course Book Information (Title, author, date of issue, publisher ... etc)	Organic Chemistry, T.W.G. Solomons and C.B. Fryhle, 12 th Edition, 2016, John Wiley & Sons.
Supportive Learning Resources (Books, databases, periodicals, software, applications, others)	1. Organic Chemistry by Hart, Craine, Hart, and Hadad, 13 th Edition, 2011, Brooks/Cole. 2. Organic Chemistry by McMurry, 9 th Edition, 2016, Brooks/Cole.
Supporting Websites	
The Physical Environment for Teaching	☒ Classroom ☐ Labs ☒ Virtual Educational Platform ☐ Others
Necessary Equipment and Software	Moodle
Supporting People with Special Needs	-
For Technical Support	E-Learning & Open Educational Resources Center Email: ellearning@zu.edu.jo ; Phone: +962 6 429 1511 ext. 425/362

Course Plan for Bachelor Program - Study Plan Development and Updating Procedures/ Pharmacy Department	QF02/0408-4.0E
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Course learning outcomes (K= Knowledge, S= Skills, C= Competencies)

No.	Course Learning Outcomes	The Associated Program Learning Output Code
Knowledge		
Students should be able to:		
K1	Identify the functional groups present in an organic compound.	MK2
K2	Describe the physical properties and chemical reactivity of a compound based on its structure.	MK2
K3	Recognize the conformational isomers, constitutional isomers, and stereoisomers.	MK2
K4	Classify the chemical reactions, and their mechanisms.	MK2
Skills		
Students should be able to:		
S1	Apply IUPAC nomenclature rules to name organic compounds and draw their structures from given IUPAC names.	MS4
S2	Sketch different compound structures	MS4
S3	Predict the main reaction outcome.	MS4

Mechanisms for Direct Evaluation of Learning Outcomes

Type of Assessment / Learning Style	Fully Electronic Learning	Blended Learning	Traditional Learning (Theory Learning)	Traditional Learning (Practical Learning)
Midterm Exam	30%	30%	30%	30%
Participation / Practical Applications	0%	0%	30%	30%
Asynchronous Interactive Activities	30%	30%	0%	0%
Final Exam	40%	40%	40%	40%

Note 1: Asynchronous interactive activities are activities, tasks, projects, assignments, research, studies, projects, and work within student groups ... etc, which the student carries out on his own, through the virtual platform without a direct encounter with the subject teacher.

Note 2: According to the Regulations of granting Master's degree at Al-Zaytoonah University of Jordan, 40% of final evaluation goes for the final exam, and 60% for the semester work (examinations, reports, research or any scientific activity assigned to the student).

Schedule of Simultaneous / Face-to-Face Encounters and their Topics

Week	Subject	Learning Style*	Reference **
1	The Basics: Bonding and Molecular Structure	Lecture Participatory learning Problem-based learning	1-44
2	Representative Carbon Compounds: Functional Groups and Intermolecular Forces	Lecture Participatory learning Problem-based learning	51-76
3	An Introduction to Organic Reactions and Their Mechanisms: Acids and Bases	Lecture Participatory learning	91-118

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		Problem-based learning	
4	Nomenclature and Conformations of Alkanes and Cycloalkanes	Lecture Participatory learning Problem-based learning	129-166
5	Nomenclature and Conformations of Alkanes and Cycloalkanes	Lecture Participatory learning Problem-based learning	129-166
6	Nomenclature and Conformations of Alkanes and Cycloalkanes	Lecture Participatory learning Problem-based learning	129-166
7	Stereochemistry: Chiral Molecules	Lecture Participatory learning Problem-based learning	181-211
8	Ionic Reactions	Lecture Participatory learning Problem-based learning	221-260
9	Ionic Reactions Midterm Exam	Lecture Participatory learning Problem-based learning	221-260
10	Alkenes and Alkynes I: Properties and Synthesis	Lecture Participatory learning Problem-based learning	269-302
11	Alkenes and Alkynes I: Properties and Synthesis	Lecture Participatory learning Problem-based learning	269-302
12	Alkenes and Alkynes II: Addition Reactions	Lecture Participatory learning Problem-based learning	311-346
13	Alkenes and Alkynes II: Addition Reactions	Lecture Participatory learning Problem-based learning	311-346
14	Alcohols and Ethers	Lecture Participatory learning Problem-based learning	469-484
15	Alcohols and Ethers	Lecture Participatory learning Problem-based learning	469-484
16	Final Exam		

* Learning styles: Lecture, flipped learning, learning through projects, learning through problem solving, participatory learning ... etc.

** Reference: Pages in a book, database, recorded lecture, content on the e-learning platform, video, website ... etc.

Schedule of Asynchronous Interactive Activities (in the case of e-learning and blended learning)

Week	Task / Activity	Reference	Expected Results
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