



Philadelphia University
Faculty of pharmacy
Department of pharmaceutical science

Course Syllabus : First semester, 2017/2018

Course Title: Pharmaceutical Organic Chemistry (I)	Course code: 0510111
Course Level: 1st year	Course prerequisite (s) and/or co requisite (s): Prerequisite: general chemistry Co requisite: pharmaceutical organic chemistry lab
Lecture Time : Dr: Adnan Dahadha / Su. Tu and Th (9.10- 10.10) (11.10- 12.10) Mo and We (8.15-9.45)	Credit hours: 3 hours

Name	Rank	Office Number	Office Hours	E-mail Address
Dr. Adnan Dahadha	Assistant Professor	407 (Nursing Collage)	Su. Tu. Th (10.10 -11.00) (12:00–1:00) Mo. We 11.30 12:30) (2:00-3:00)	adahadha@philadelphia.edu.jo

Course module description:

This course will subject the student to the molecular orbital theory of organic compounds, saturated aliphatic cyclic and acyclic hydrocarbon. Principles of the IUPAC nomenclature of organic compounds, unsaturated hydrocarbons, halogen compounds. Isomerism and stereoisomerism of organic compounds, alcohol and ethers aldehydes and ketones.

Course module objectives:

For student to have a solid understanding of structure of hybridization, steric

hindrance, polarity and the structure theory of organic chemistry .
Substitution and elimination reaction provide a good chance for the student to understand the importance of organic chemistry bringing the student to the point that they can propose a reasonable synthesis using substitution and give a careful selection of materials.

Course/ module components

- **Books (title , author (s), publisher, year of publication)**

Text book:

Organic Chemistry, J.. Mc-Murry, 2014, 8th edition.

The above textbooks cover the course material in detail. However, additional practical tips, examples and conclusions are discussed in details by the lecturer and the student will be responsible for the additional material.

References:

1- Organic Chemistry, SOLOMON and FRYHLE, Wiley international brooks/ cole, thomson learning, 2003, eighth edition.

Students will be expected to give the same attention to these references as given to the Module textbook(s)

Teaching methods:

Lectures, discussion group, tutorials and problem solving

Learning outcome

By the end of this course, students will be able to:

- know the basic principle of organic chemistry.
- Have a good knowledge of electronic structure of the atom and molecules, resonance theory, inductive effect and electro negativity of an element.
- Have an good idea of organic chemistry regarding stereochemistry, reaction and synthesis according to their knowledge in functional group and reaction mechanism.
- Cognitive skills (thinking and analysis).

Interactive learning by participating the student into the lectures content.

• **Communication skills (personal and academic):**

- Organic chemistry allows the student to use what they learned from the course to explain, communicate and predict what follows. Each student will be able to use this skill and communicate in a way to apply what he have learned, reasoning this way to a solution rather than memorizing

Review concept at office hours

- Practical and subject specific skills (Transferable Skills).

Student has the ability to transfer what he learned to design, formulate and synthesize medicinal agent of pharmaceutical interest.

Assessment instruments

<u>Allocation of Marks</u>	
Assessment Instruments	Mark

First examination	20
Second examination	20
Final examination: 40 marks	40
Quizzes	20
Total	100

Make up exam will be afford for valid reasons only with consent of dean. Make-up exam may be different from regular exam in content and format.

Documentation and academic honesty

- Documentation style (with illustrative examples)

Taking headlines/notes from the text book with further elaborated/detailed discussion during the lecture.

- Avoiding plagiarism.

Course/module academic calendar

week	Basic and support material to be covered	Homework/ reports and their due dates
1 & 2	Chap. 1 & 2 -Introduction. -bonding in organic molecules. -covalent bonding and formal charges. -polar covalent bond. -structure of molecules. -polar and non polar molecules. - resonance structures -hybridization. -Acid and Base	
3 & 4	Chap. 3 -Alkanes their structure, properties, and their nomenclature, synthesis and chemical reactions. -conformational analysis and structural isomerism.	
5	Chap. 4 Cycloaliphatic hydrocarbons , structure and the strain theory. Stability and their reactions. Conformational analysis	
	FIRST EXAM	
6 & 7	Chapter 5 Stereochemistry Stereochemistry and stereoisomerism, the chiral center and enantiomers, diastereomers , Meso structures and the reactions of chiral	

	molecules. Racemic reactions	
8	Chapter 7 Alkene: structure and reactivity	
9	Chapter 8 Alkenes :reactions and synthesis	
	SECOND EXAM	
10	Chapter 9 Alkynes :an introduction to organic synthesis	
11	Chapter 10 Organohalides classification and their physical properties. Preparation of aliphatic halides.	
(12) +(13)	Chapter 11 Reactions of alkylhalides Nucleophilic aliphatic substitution Mechanism and kinetics of both(SN1- and SN2) Carbocations structure and stability organometalic compounds. Dehydrohalogenation of alkyl halides Elimination reactions(E1 and E2) mechanisms Elimination vs Substitution	
(14)		
	Final Exam Week	Final Exam Week

Expected workload:

On average students need to spend 1 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Websites

<http://www.philadelphia.edu.jo/pharmacy/resources.html>