Course specification
2019- 2020
Faculty of Pharmacy
Mansoura University

First Level

Course Specification Pharmaceutical Organic Chemistry 1

University: Mansoura University (MU)
Faculty: Pharmacy
Department: Pharmaceutical Organic Chemistry
Course title: Pharmaceutical Organic Chemistry 1
Course code: PO111

Program on which the course is given	Pharmaceutical Science
Academic Level	First Level, First semester
Date of course specification	12/12/2019

1. Basic Information: Course data:

Course title:	**Pharmaceutical organic Chemistry 1**	**Code: PO111**
Specialization:	**Pharmaceutical organic Chemistry**	
Prerequisite:	---------	
Teaching Hours:	**Lecture: 2**	**Practical: 1**
Number of units: (credit hours)	**3**	

2. Course Aims:

2.1. Gain an understanding of the basic principles of atomic structures.
2.2. Have a good idea the stereochemistry of the chiral organic compounds
2.3. Enable the student to understand the basics of the chemical reactions.
2.4. Recognize the chemical properties of organic compounds.

3. Intended learning outcomes (ILO_S):

a- Knowledge and understanding

a1	Represent various structural formulas of different organic compounds.
a2	understand some of the chemical reaction mechanism.
a3	Recognize the stereochemistry of the organic molecules through studying the
a4	Know the effect of the intermolecular forces in the physical and chemical properties of the organic compounds.

b- Intellectual skills

b1	Predict the kind of stereochemical representations of the organic molecules.
b2	Think critically about the kind of the reactions and their mechanisms.
b3	Investigate the electronic displacement factors affecting chemical and physical properties of the organic molecules.

c- Professional and practical skills

c1	Design and plain various chiral resolution methods for separation of optically active compounds.
c2	Perform chemical reactions to recognize the presence of some functional groups in the organic compounds.
c3	Record data of the experimental experiments.

d- General and transferable skills

d1	Interpret the sequence of chemical reactions and mechanisms.
d2	Estimate lab safety and chemical toxicity.
d3	Differentiate the several types of stereochemical molecules.
d4	Work effectively in a team.

4. Contents:

Week No	Topics	No. of hours	Lecture credit hours	Practical credit hours
1.	Stereochemistry: Isomerism and Conformational Isomers.	2	2 hours	
2.	Stereochemistry: Configurational Isomers.	2	2 hours	
3.	Stereochemistry: Chirality in Systems lacking Stereogenic Centers	2	2 hours	

4.	Stereochemistry: Configurational Isomers in Cyclic Compounds.	2	2 hours	
5.	**Mid-term Exam**			
6.	Stereochemistry: Stereochemistry of Organic Reactions.	2	2 hours	
7.	Organic Reactions: Reactivity of Covalent Bonds and Nucleophilic Substitution at Saturated Carbon	2	2 hours	
8.	Organic Reactions: Elimination reactions	2	2 hours	
9.	Organic Reactions: Free Radical Reactions and Addition reactions.	2	2 hours	
10.	Atoms and bonding.	2	2 hours	
11.	Electronic displacements factors.	2	2 hours	
12.	Intermolecular forces. Stability of carbon intermediate, acidity and basicity concepts.	2	2 hours	
13.	**Final written & oral**			
	Practical topics			
Week No	**Topics**	**No. of hours**	**Lecture credit hours**	**Practical credit hours**
1.	Laboratory safety rules and Practices	1		1 hour
2.	Identification of organic compounds	1		1 hour
3.	Pyysical characters (Solubility)	1		1 hour
4.	Chemical Properties (soda lime)	1		1 hour
6.	**Mid-term Exam**			
7.	Sodium carbonate	1		1 hour
8.	Ferric chloride	1		1 hour
9.	Element test	1		1 hour
10.	Stereochemistry	1		1 hour
11.	Revision	1		1 hour
12.	Practical exam	1		1 hour

5. Teaching and learning Methods:

5.1	Lectures using whiteboard
5.2	Lectures using Data show, PowerPoint presentations
5.3	Research assignments
5.4	Use of computer software for drawing of chemical structures
5.5	Chemical models and Chembio-office Chemdraw
5.6	Animation files

6. Student Assessment:

a- Assessment methods

1. Written exam	To assess understanding, intellectual and professional skills
2. Practical exam	To assess professional and practical skills
3. Oral	To assess knowledge, understanding, intellectual skills, general skills and confidence
4. Laboratory reports	To assess the skills of problem-solving and date presentation

b- Assessment schedule

Assessment 1	Practical	8th week and 12th week
Assessment 2	Mid-term	6th week
Assessment 3	Oral	15th week
Assessment 4	Written	15th week

c-Weighting of assessments

1.	Mid-term examination	10 %
2.	Final-term examination	50 %
3.	Oral examination	15 %
4.	Practical examination and Semester work	25 %
Total		100 %

7. List of References

No	Reference	Type
1.	Fundementals of Organic Chemistry, T. Solomon.	Book

2.	Notes in organic Chemistry, by Staff members of Pharm. Org. Chem. Dept	Course notes

8. Matrix of knowledge and skills of the course

No	Course contents	Study Week	ILOS			
			Knowledge & understanding	Intellectual skills	Professional and practical skills	General & transferable skills
1.	Atoms and bonding Electronic displacements factors	1st	a1	b1	c1	d1
2.	Intermolecular forces Stability of carbon intermediate, acidity and basicity concepts	3rd	a1	b1	c1	d1
3.	Stereochemistry: Isomerism and Conformational Isomers Stereochemistry: Configurational Isomers	4th and 5th	a2	b2	------	d1
4.	Stereochemistry: Chirality in Systems lacking Stereogenic Centers Stereochemistry: Configurational Isomers in Cyclic Compounds	7th -9th	a3	b3	c2	d1
5.	Stereochemistry: Stereochemistry of Organic Reactions. Organic Reactions: Reactivity of Covalent Bonds and Nucleophilic Substitution at Saturated Carbon.	10th -13th	a3	b3	c2	d1

6.	Organic Reactions: Elimination r Organic Reactions: Free Radical Reactions and Addition reactions	2nd -5th and 7th -12th	a1, a4	b1,b4	c1, c3, c4	d1, d2, d3, d4

Course Coordinator:	**Mohammed Adel Massoud**
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