



Course Specification
2017- 2018
Faculty of Pharmacy
Mansoura University



المستوى الرابع

Medicinal Chemistry 2

University: Mansoura
Faculty : Pharmacy
Department : Medicinal Chemistry
Course title: Medicinal Chemistry 2
Course code: PD422

Program on which the course is given	B. Pharm
Academic Level	Fourth Level, Semester Two
Date of course specification approval	11/2/2018

1- Basic Information : Course data :

Course title:	Medicinal Chemistry 2	Code: PD422	
Specialization:	Pharmaceutical		
Prerequisite:		Pharmaceutical Organic Chemistry 2	
Teaching Hours:	Lecture: 3	Practical: 2	
Number of units: (credit hours)	4 credit hours		

2- Course Aims:

1. Reviewing the action of drug members on the central nervous system, hormones and related drugs, prostaglandins, analgesics, antihistaminics, and gastrointestinal drugs.
2. Comprehending the relationship between the chemical structure of these drugs and their physicochemical properties, pharmacokinetics, biological activity, together with their mode of action.

Intended learning outcomes (ILO_s):

a- Knowledge and understanding

a1	Identify the structure-activity relationship of group of pharmaceutical compounds.
a2	Enumerate the theories of synthesis methods of natural and pharmaceutical compounds.
a3	Classify the pharmacological properties of drug groups relative to their chemical structures including mechanism of action, therapeutic uses, dosage, contraindications, adverse drug reactions and drug interactions.

b- Intellectual skills

b1	Design appropriate methods for the synthesis of various pharmaceutical compounds.
b2	Predict the binding properties and biological activity of natural and synthetic compounds based on molecular structure.



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c- Professional and practical skills

c1	Perform good pharmacy practice by proper understanding of drug chemistry.
c2	Apply principles of Chem 3D to get precise information about the drug docking and overlay.

d- General and transferable skills

d1	Interact effectively in team working.
d2	Exploit information technology (IT) tools.
d3	Practice independent learning needed for continuous professional development.
d4	Present information clearly in written, electronic and oral forms.
d5	Promote critical thinking, problem-solving, decision-making, and time managing capabilities.

3- Contents:-

Week No.	Topics	No. of hours	Lecture Credit hours	Practical credit hours
1	Insulin and Oral Hypoglycemic Drugs	3	3	
	CNS depressants 1			
2	Thyroid Hormones and Antithyroid Drugs	3	3	
	CNS Depressants 2			
3	Introduction to Steroid Hormones	3	3	
	CNS Depressants 3			
4	Male Sex Hormones	3	3	
	CNS Depressants 4			
5	Female Sex Hormones: Estrogens	3	3	
	CNS Depressants 5			
6	Female Sex Hormones: Progestins	3	3	
	CNS Depressants 6			
7	Mid-term Exams	-	-	
8	Adrenocorticoids	3	3	
	CNS Stimulants 1			
9	CNS Stimulants 2	3	3	
	Opioid Analgesics 1			
10	Opioid Analgesics 2	3	3	
	Prostaglandins			
11	H1-Antihistaminics	3	3	
	Nonsteroidal Antiinflammatory Drugs 1			
12	H2-Antihistaminics and Proton Pump Inhibitors	3	3	



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	Nonsteroidal Antiinflammatory Drugs 2			
15	Final Written and Oral Exams			
	Practical Topics			
1	Chem3D	2		1
2	Chem3D	2		1
3	Chem3D	2		1
4	Chem3D	2		1
5	Chem3D Exam	2		1
6	Chem3D Exam	2		1
7	Mid Term Written Exams			
8	Case Study: Analgesics	2		1
9	Case Study: Hormones	2		1
10	Case Study: CNS Drugs	2		1
11	Case Study Exam	2		1

4- Teaching and Learning Methods :

5.1	Lectures using power point presentations
5.2	Practical sessions in computer rooms using simulation programs (computer software)
5.3	Case study
5.4	Assignments

5- Student Assessment:

a- Assessment Methods:

1-Written exam	To assess understanding, intellectual, professional skills
2-Practical exam	To assess professional and practical skills
3-Oral	To assess Knowledge, understanding, intellectual skills, general skills
4-Case study	To assess the skills of problem-solving and data presentation

b- Assessment schedule

Assessment 1	Practical	5, 6, and 11 th week
Assessment 2	Mid-term	7 th week
Assessment 3	Written	15 th week
Assessment 4	Oral	15 th week

c- Weighing of assessments

1	Mid-term examination	10 %
2	Final-term examination	50 %
3	Oral examination	15 %



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4	Practical examination & Semester work	25 %
Total		100 %

6 - List of References

No	Reference	Type
1.	Practical course notes prepared by the department staff members	Course notes
2.	"Foye's Principles of Medicinal Chemistry", 8 th edition, (David A. Williams, Thomas L. Lemke & William O. Foye, Editors), Lippincott Williams & Wilkins, 2017	Book
3.	"Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry" 12 th Edition, (J. H. Block and J. M. Beale Jr, Editors), Lippincott Williams & Wilkins, Philadelphia, PA, 2011	Book
4.	Graham L. Patrick; "An Introduction to Medicinal Chemistry" Oxford University Press, USA; 6 th edition, 2017	
5.	Thomas, Gareth, "Fundamentals of Medicinal Chemistry" Wiley-Blackwell; Kindle Edition (2013).	Book

7- 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.	Oral hypoglycemic drugs, thyroid hormones, Sex hormones, and corticosteroids	1-8	a2,a3	b2	c1	d2,d5
2.	Drugs acting on the central nervous system	1-9	a1,a2,a3	b1,b2	c1	d2,d5
3.	Opioid analgesics, and non-steroidal antiinflammatory drugs	9-12	a1,a2,a3	b1,b2	c1	d2,d5
4.	Prostaglandins	10	a2,a3	b2	c1	d5
5.	Antihistaminics and drugs acting on gastrointestinal tract	11,12	a2,a3	b2	c1	d5

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