University : Mansoura University

Faculty : Faculty of Pharmacy

Department :

1- Course data :-

Code:	PD422					
Course title:	Medicinal Chemistry (2)					
Level:	Four					
Program Title:	• pharmaceutical sciences					
Specialization:	Major					
Teaching Hours:	**Theoretical:**	3	**Tutorial:**		**Practical:**	1

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.

3- Intended learning outcomes of course (ILO'S) :-

a- Knowledge and understanding

1. [a4] Enumerate the theories of isolation, synthesis, purification, identification and standardization methods of chemicals, natural and pharmaceutical compounds; as well as the fundamentals of drug design and development.
    - a4.1-Enumerate the theories of synthesis methods of natural and pharmaceutical compounds.
2. [a5] Identify the structure-activity relationship of group of pharmaceutical compounds.

3. [a14] Classify the pharmacological properties of drugs including mechanism of action, therapeutic uses, dosage, contraindications, adverse drug reactions and drug interactions.
    - a14.1-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

1. [b5] Design appropriate methods for isolation, synthesis, purification, identification and standardization of various chemicals and pharmaceutical compounds.
    - b5.1-Design appropriate methods for the synthesis of various pharmaceutical compounds.
2. [b16] Predict the physical and chemical properties and biological activity of natural and synthetic compounds based on molecular structure.

3. **c- Professional and practical skills**

1. [c5] Perform good pharmacy practice by proper understanding of etiology and pathophysiology of diseases, and drug chemistry.
    - c5.1-Perform good pharmacy practice by proper understanding of drug chemistry.

d- General and transferable skills

1. [d3] Interact effectively in team working.
2. [d4] Exploit calculations and statistical methods as well as information technology (IT) tools.
    - d4.1- Exploit information technology (IT) tools.
3. [d8] Present information clearly in written, electronic and oral forms.
4. [d9] Promote critical thinking, problem-solving, decision-making, and time managing capabilities.

4- Course contents :-

No	Topics	Week
1	Drugs acting on the central nervous system	1-4
2	Opioid analgesics	5
3	Prostaglandins	6
4	Oral hypoglycemic drugs	6
5	Non-steroidal antiinflammatory drugs	7
6	Sex hormones, and corticosteroids	8-10
7	Thyroid hormones and antithyroid drugs	9
8	Antihistaminics and drugs acting on gastrointestinal tract	11

5- Teaching and learning methods :-

S	Method	Knowledge and understanding	Intellectual skills	Professional skills	General skills
1	Lectures using power point presentations	a4.1,a5,a14.1	b16		d4.1,d9
2	Practical sessions in computer rooms using simulation programs (computer software)				d4.1,d8,d9
3	Case study	a5,a14.1	b16	c5.1	d3,d9

6- Teaching and learning methods of disables :-

1. none

7- Student assessment :-

a- Student assessment methods

No	Assessment Method	Knowledge and understanding	Intellectual skills	Professional skills	General skills
1	Written exam	a4.1,a5	b5.1,b16	c5.1	
2	Practical exam			c5.1	d3,d4.1,d8,d9
3	Oral	a4.1,a5,a14.1	b16		d8,d9
4	Case study				d9

b- Assessment schedule

No	Method	Week
1	Practical	5,7,11
2	Mid-term	6

3	Written	15
4	Oral	15

c- Weighting of assessments

No	Method	Weight
1	Mid-term examination	10
2	Final-term written examination	50
3	Oral examination	15
4	Practical examination & Semester work	25
Total		100%

8- List of references

S	Item	Type
1	An Introduction to Medicinal Chemistry. Graham L. Patrick Editor, 5th Edition, Oxford University Press, Oxford, 2013.	Books
2	Foye’s Principles of Medicinal Chemistry, T.L. Lemke, and D. A. Williams (Eds), 7th Edition, Williams & Wilkins: Philadelphia, 2013.	Books
3	Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry, John M. Beale (Editor) 12th Edition, Lippincott William's & Wilkins, 2010.	Books

9- Matrix of knowledge and skills of the course

S	Course contents	Knowledge and understanding	Intellectual skills	Professional skills	General skills
1	Drugs acting on the central nervous system	a4.1,a5,a14.1	b5.1,b16	c5.1	d3,d8,d9
2	Opioid analgesics	a5,a14.1	b16	c5.1	d3,d8,d9
3	Prostaglandins	a5,a14.1	b16	c5.1	d4.1,d8,d9
4	Oral hypoglycemic drugs	a5,a14.1	b16	c5.1	d4.1,d8,d9
5	Non-steroidal antiinflammatory drugs	a4.1,a5,a14.1	b5.1,b16	c5.1	d3,d4.1,d8,d9
6	Sex hormones, and corticosteroids	a5,a14.1	b16	c5.1	d8,d9

7	Thyroid hormones and antithyroid drugs	a5,a14.1	b16	c5.1	d8,d9
8	Antihistaminics and drugs acting on gastrointestinal tract	a4.1,a5,a14.1	b5.1,b16	c5.1	d8,d9

Course Coordinator(s): -

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