

Course Specifications

University	Beni-Suef
Faculty	Pharmacy
Dept.	Pharmaceutical Chemistry

1-Course Info.**Programme(s) on which the course is given:** General

Course Name and code No.: Medicinal chemistry III (803)

Academic year/ Level: 2018/2019 – Fifth year**Credit hours:** Lecture (...3..) hour + Practical (...1..) hour**2-Overall Aim of the Course**

By the end of this course the student should be aware of is the fundamental principles that underpin modern medicinal chemistry of NSAIDs, Opioid analgesics, CVS drugs, Autonomic nervous system drugs, CNS depressant drugs, CNS stimulant drugs, antihistaminics and vitamins.

3-Intended Learning Outcomes of the course (ILOs)**a. Knowledge and understanding**

After the completion of the course, the student should be able to:

- a1. Demonstrate comprehensive knowledge of the principles behind chemical identification and lead compound development.
- a2. Describe a detailed clear knowledge of the principle bonding interactions in drug receptor level, the basic concepts of structure activity relationships (SAR).
- a3. Define the synthesis, chemical properties, mode of action, assay, metabolism, adverse

side effects and structure-activity relationship of the drugs related to the topics covered by this course.

a4. Explain the relationship between molecular structure and its biological action particularly in drugs related to the topics covered by this course.

b. Professional and Practical Skills

After the completion of the course, the student should be able to:

- b1. Carry out appropriate experiments to determine the purity of raw materials.
- b2. Analyze quantitatively drugs and their physicochemical properties.

c. Intellectual Skills

After the completion of the course, the student should be able to:

- c1. Analyze the contributions of organic functional groups to receptor binding of drug molecules and predict their effects on activity/potency.
- c2. Predict pharmacological activity/potency of individual drugs that their names were covered by the course contents based on the contribution of their functional groups to their structures.
- c3. Use spectral data in drug analysis and identification.
- c4. Apply chemical knowledge to the development and analysis of drugs.

d. General and Transferable Skills

After the completion of the course, the student should be able to:

- d1. Demonstrate competence in oral, written communication and data analysis and interpretation.
- d2. Develop the ability to work effectively as part of a team.
- d3. Set realistic plan work to meet target within deadlines.
- d4. Use equipment in the laboratory properly and safely.

4-Course Contents		
Topics	No. of hours	
	Tutorial / Practical	Lecture
NSAIDs		6
Opioid analgesics		3
CVS drugs		6
Autonomic nervous system acting drugs		4
CNS stimulant drugs		3
CNS depressant drugs		6
Antihistaminic drugs		3
Vitamins		3
Neurodegenerative agents		2
Principles of IR and Mass spectroscopy	1	
Principles of ¹ H NMR Spectroscopy	1	
Assay of Aspirin	1	
Assay of Sulindac	1	
Assay of Naproxen		
Assay of Phenyl butazone	1	
Assay of Aminophylline	1	
Assay of Chloral hydrate	1	
Assay of Methyl dopa	1	
Assay of Nifedipine	1	
Assay of Captopril	1	
Assay of Calcium ascorbat	1	
Assay of Oral rehydran	1	
Total	12	36

5- Teaching and learn Strategies

- i. Lectures.
- ii. Practical laboratory sections.

7- Student Assessment Methods**a-Methods**

- i. Laboratory work (practical sections activities and other assignments delivered as reports and oral presentations) and quiz to assess the theoretical aspects of experimental work.
- ii. Practical examination to assess gained practical skills.
- iii. Written exam to assess knowledge and understanding of theoretical information as well as higher intellectual skills.

iv. Oral examination to assess acquired knowledge and higher intellectual skills.

b- Assessment Schedule

Assessment	Week
Assessment 1: written quizzes 1 & 2	Week 3,5 7,10
Assessment 2: Practical Exam1&2 and practical Quiz	Week: 8 & 12
Assessment 3: Final Written and Oral Exam.	

c- Weighting of Assessment			
Type of assessment	Marks	Weight (%)	
Practical Exam	70	35%	
Final Written Exam	100	50%	
Final Oral Exam	30	15%	
Total	100	100%	

8-List of References

a.Notes	i. Student Note ii. practical Note iii Exam Sheats iv Referance books
b.Mandatory Books	i. Foye, W.O.; "Principles of Medicinal Chemistry", 4 th edition, Lippincott Williams & Wilkins, U.S.A. ii. Patrick, G. L.; "An introduction to medicinal Chemistry", 3 rd Edition Oxford University Press, 2005.
c.Suggested Books	i. Abraham, D.J.; "Burger's Medicinal Chemistry", 6 th edition, John Wiley & sons, New Jersey, 2003. ii. Delgado, J.N. and Remers, W.A.; "Wilson and Gisvold's Textbook of Org Medicinal and Pharmaceutical Chemistry", 11 th edition, Lippincott Williams &

	Wilkins, U.S.A., 2004
d.Journals	<p>i. European journal of medicinal chemistry.</p> <p>ii. Journal of American chemical society.</p>

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Head of department: Ass.Pro.Dr/Mohammed Taha El-saadi

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