

Pharmacology Course Specification

Benghazi University

Faculty: Pharmacy

Department: Pharmacology and Toxicology

Course title: Pharmacology

Course Specifications

Program on which the course is given: B.Sc. in Pharmaceutical Sciences

Academic year / level: Third year

Date of course specification approval: 2012

1. Basic Information:

Title: Pharmacology Code: Credit hours: 114

Lecture: 104 Tutorial: 12 Practical: 30 Total: 5 hours/week

2. Course Objectives:

- 2.1 To provide an understanding of the basic principles of drug action on biological systems.
- 2.2 To describe the ways drugs/chemicals affect the human body at the molecular, cellular, organ and organism level, and the ways drugs are affected by human body.
- 2.3 To illustrate the pharmacological principles of treatment using different drug groups.

3. Intended Learning Outcomes (ILOs):

On course completion the student will be able to:

- a. Knowledge and understanding:
 - a1- Explain the principles of pharmacodynamics and pharmacokinetics.
 - a2- Classify different types and locations of receptors and the responses mediated by neurotransmitters, agonist and antagonist drugs.
 - a3- Illustrate the pharmacological actions, mechanisms of action, therapeutic uses, adverse drug reactions, contraindications, and interactions of various drug groups.
- b. Intellectual Skills:
 - b1- Utilize the acquired pharmacological knowledge in proper drug selection for treatment of various diseases.
 - b2- Link the mechanism of action of drugs with the pathophysiology of the disease.
- c. Professional and Practical Skills:
 - c1- Be familiar with routes of drug administration.
 - c2- Use and calculate different parameters of drug pharmacokinetics.
 - c3- Observe, record and analyze the effects of drugs on biological tissues and in intact animals.
 - c4- Handle experimental animals in a humane way.

d. General and Transferable Skills:

- d1- Independent learning, critical thinking, and problem solving.
- d2- Basic IT literacy and presentation skills.
- d3- Integration of different fields of knowledge.
- d4- Team working.

4. Contents:

No.	Topic	No. of hours	Lecture (1hr)	Practical (3hrs)	Tutorial (1hr)
1.	General pharmacology	10	10	2	2
2.	Autonomic and neuromuscular pharmacology	14	14	2	2
3.	Autacoids and non-steroidal anti-inflammatory drugs	9	9	1	1
4.	Cardiovascular drugs and diuretics	15	15	2	2
5.	Drugs acting on central nervous system	19	16	2	2
6.	Respiratory pharmacology	3	3	-	-
7.	Endocrine pharmacology	14	14	-	1
8.	Chemotherapy	16	16	-	2
9.	Gastrointestinal drugs	4	4	-	-
10.	Drug interactions	2	2	1	-

Experimental Pharmacology

- 1 Introduction to experimental pharmacology
- 2 Isolated intestine I (spasmogens & antagonists)
- 3 Isolated intestine II (dose-response curve)
- 4 Drug interactions
- 5 Phrenic-nerve diaphragm preparation (demonstration)
- 6 Rat blood pressure (demonstration)
- 7 Rabbit isolated heart (demonstration)
- 8 Analgesia (writhing test)
- 9 Test for anticonvulsant activity
- 10 Experimental parkinsonism

5. Matrix

Week	a. Knowledge & Understanding			Skill									
				b. Intellectual		c. Professional & Practical				d. General & Transferable			
	a1	a2	a3	b1	b2	c1	c2	c3	c4	d1	d2	d3	d4
1	√					√				√			
2	√						√	√	√	√			√
3		√					√		√	√			
4		√						√					√
5		√											
6		√		√				√					√
7		√		√									
8			√		√			√				√	√
9			√		√								
10			√					√					√
11			√		√							√	
12			√		√			√					√
13			√		√						√		√
14			√	√				√			√		√
15			√		√						√		√
16			√	√				√			√		√
17			√	√									
18			√	√				√					√
19			√	√								√	
20			√	√				√					√
21			√	√								√	
22			√	√								√	√
23			√	√									
24			√	√									√
25			√		√								
26			√	√									√

6. Teaching and Learning Methods:

- 5.1 Lectures
- 5.2 Practical classes (Lab experiments+ computerized experiments simulation)
- 5.3 Tutorials and group discussions
- 5.4 E-tutorials
- 5.5 Presentations
- 5.6 Assignments (if applicable)
- 5.7 Videos

7. Student Assessment Methods:

a. Assessment methods:

1-	A fortnight quiz	to assess	a1, a2, a3, b1, b2, d1& d3
2-	A midyear exam	to assess	a1, a2, a3, b1, b2, d1 & d3
3-	A fortnight practical session	to assess	c1, c2, c3, c4 & d4
4-	A final practical exam	to assess	c1, c2, c3, c4 & d4
5-	A final written exam	to assess	a1, a2, a3, b1, b2, d1& d3
6-	A final oral exam	to assess	a1, a2, a3, b1, b2, d1& d3
7-	Presentations	to assess	b1, b2, d2, d3 & d4

b. Assessment schedule:

A quiz	Every fortnight
A midyear exam	Week 10
Practical sessions	Every fortnight
A final practical exam	Week 22
A final written exam	At the end of the year
A final oral exam	At the end of the year

c. Weighing of Assessments:

Midyear Examination	13.3%
Practical continuous Assessment	10.0%
Final practical Examination	10.0%
Final written Examination	45.0%
Final oral Examination	15.0%
Other types of assessment	6.7%
Total	100%

8. List of References:

No.	Reference	type
1.	Katzung Basic and Clinical Pharmacology (10 th edition)	Textbooks
2.	Lippincott's Illustrated Reviews: Pharmacology (4 th edition)	
3.	Rang and Dale's Pharmacology (6 th edition)	
4.	Goodman & Gilman's: The pharmacological basis of therapeutics (12 th edition)	
5.	British journal of Pharmacology	Periodicals
6.	Science	
7.	http://www.benghazi.edu.ly/	Websites
8.	http://www.ncbi.nlm.nih.gov/pubmed	
9.	Practical notes	Course notes