Pharmaceutical Chemistry

DIPLOMA COURSE SPECIFICATION

A. BASIC INFORMATION

University:	**Sadat City**
Faculty:	**Veterinary Medicine**
Program on which the course is given:	**Diploma of Veterinary Pharmacology and Pharmaceuticals**
Department offering the Course:	**Pharmacology**
Course code:	**927**
Course title:	**Pharmaceutical Chemistry**
Lecture (hr/week):	**1**
Practical (hr/week):	**1**
Course coordinator:	**Dr. Mohamed El-Hewaity**

B. PROFESSIONAL INFORMATION

١) Overall aims of course

The aim of this course is to provide the diploma students with up- to- date basic information and knowledge about the actions, mechanism of action, chemical structure of different groups of drugs and understand the relation between the chemical structure and action of drugs and how to modify in the chemical structure of drug molecule to change its properties and change its action to more potent and less toxic or the reverse.

٢) Intended learning outcomes of course (ILOs)

a) KNOWLEDGE AND UNDERSTANDING

By the end of this course, the graduate should be able to:

a.1. Discuss the actions of drugs.
a.2. Recognize the mechanism of action of these drugs.
a.3. Describe the chemical structure of these drugs.
a.4. Identify and correlate between the chemical structure of these drugs and their action.
a.5. Express the ethical standards which will be developed in relation to veterinary drug therapeutics.

b) INTELLECTUAL SKILLS

By the end of this course, the student should be able to:

b.1. Establish a good link between drugs chemical structure and their pharmacological actions.
b.2. Investigate the safe or toxic effects in relation to modifying the chemical structure of drugs.
b.3. Use the appropriate laboratory animal or in-vitro test for a specific experiment.
b.4. Interpret the results of different laboratory tests.

c) PROFESSIONAL AND PRACTICAL SKILLS

By the end of this course, the student should be able to:

c.1. Employ of recent techniques for better understanding of drug actions and mechanism of action..
c.2. Estimate the drugs actions in-vivo and in-vitro.
c.3. Use appropriate basic laboratory equipment and animals safely and efficiently.
c.4. Solve and mange of veterinary therapeutics problems such as drug side effects and toxicity, etc..

d) GENERAL AND TRANSFERABLE SKILL

By the end of this course, the student should be able to:

d.1. Work effectively as part of a team.
d.2. Use of library facilities and IT tools.
d.3. Explore appropriate computer / keyboard skills including word

٣) Topics and contents

Topic	No. of hours		
	Lectures	Practical	Total
Structure activity relationship of :- **Antimicobials.** Sulphonamides, Nitrofurans and Quinolones.	**8**	**-**	**8**
Antibiotics. Penicillins and cephalosporines.	**12**	**-**	**12**

Aminoglycosides and Antitubercular drugs. Tetracyclines and chloramphenicol Macrolide and polypeptide antibiotics.			
Anthelmintics. Anti-nematodal drugs. Anticestodal drugs. Antitrematodal drugs.	**12**	**-**	**12**
Anticoccidial drugs.	**4**	**-**	**4**
Analgesics. Narcotic analgesics. Antipyretic analgesics.	**8**	**-**	**8**
Laboratory animal handling, anesthesia and requirements.	**-**	**4**	**4**
Isolated organ bath system (oscillograph) parts, applications and uses.	**-**	**4**	**4**
Determination of drug actions on isolated tissue and organ preparations.	**-**	**12**	**12**
Assessment of drugs actions on intact laboratory animals.	**-**	**12**	**12**
Testing the effect of route of administration on drugs actions.	**-**	**8**	**8**
Drug samples.	**-**	**4**	**4**
Total	**44**	**44**	**88**

٤) Teaching and learning methods

4.1. Lectures.
4.2. Practical.
4.3. Self-learning activities.

٥) Student assessment

a. METHODS:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills
4- Student activities	For assessment of knowledge and general and transferable skills

b. MATRIX ALIGNMENT OF THE MEASURED ILOS/ ASSESSMENTS METHODS:

	K.U (a)	I.S (b)	P.P.S (c)	G.S (d)
Written exam	1,2,3,4,5	1,2		
Practical exam		3,4	1,2,3,4	
Oral exam	1,2,3	1,2		

Student activities (assay, seminar, etc.)	1,2,5	1,2		**1-3**

c. WEIGHT OF ASSESSMENTS:

Assessment	Allocated Mark	Evidence
Final written exam	**50%**	Marked and signed written paper
Practical exam	**20%**	Marked and signed practical exam paper
Oral exam	**20%**	Signed list of oral exam marks
Student assignments	**10%**	Representative samples of presented materials

٦) List of references

6.1. Essential textbooks

- **A note on Veterinary pharmacology, Part 1** by, Prof. Dr.Taha Abd El Fatah Attia.
- **A note on Practical pharmacology. Part 1(experimental pharmacology)** by, Prof. Dr Taha Abd El Fatah Attia.
- **A note on Veterinary pharmacology ,Part 2** by Prof. Dr Abd El Fatah Attia.
- **A note on Practical pharmacology. Part 2(Dispensing & therapeutics)** by, Prof. Dr Taha Abd El Fatah Attia.
- **Joel G. Hardman, Lee E. Limbird and Alfred G. Gilman (2001):** Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 10th Edition.
- **G. C. Brander, D. M. Pugh, R. J. Bywater and W. L. Jenkins (1991):** Veterinary applied pharmacology and therapeutics , 5th Edition.
- **Merck , S. and Dohme , C. (2005) :** The Merck Veterinary Manual, 9th Edition.
- **M. Beale, Jr. and John H. Block.(2011):** Wilson and Gisvold's textbook of organic medicinal and pharmaceutical chemistry. , 12th ed.
- **Carl Binz (2008):** Lectures on pharmacology for practitioners and students ,Volume: v.2.
- **P. Venkatesan and M. J. Wood (1998):** General principles of antimicrobial therapy , pp. 63-78.

6.3. Periodicals

- Journal of pharmacology and experimental therapeutics.
- British Journal of pharmacology.
- European Journal of Pharmacology.

6.4. Web sites

- http://www.vetmed.wsu.edu/depts.-vcpl/
- http://www.cc.nih.gov/
- http://www.acvcp.org/
- http://www.clinicalpharmacology.com/
- http://www.vetnet.net/
- http://www.summitpk.com/pksolutions.htm
- http://www.analyticon.co.uk/pkpdpage.htm

	Course coordinators	Head of department
Name	**Dr. Mohamed El-Hewaity**	**Prof. Dr. Shabaan Gad Allah**
Signature		

Matrix alignment of course topics and ILOs

Topic	No. of hours /week		Total hours	Hours for lect.	Hours for pract.	ILOs				T&L. methods				
	Lect.	Pract.				K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)	Lect.	Pract.	Self & active leaning	Audio visual	Case study
Structure activity relation ship of :- Antimicobials. Sulphonamides, Nitrofurans and Quinolones.	1	-	8	8	-	1,2,3,4	1,2	4	1,3	+	-			
Antibiotics. Penicillins and cephalosporines. Aminoglycosides and Antitubercular drugs. Tetracyclines and chloramphenicol Macrolide and polypeptide antibiotics.	1	-	12	12	-	1,2,3,4	1,2	4	1,3	+	-			
Anthelmintics. Anti-nematodal drugs. Anticestodal drugs. Antitrematodal drugs.	1	-	12	12	-	1,2	1,2	4	1,3	+	-			
Anticoccidial drugs.	1	-	4	4	-	1,2	1,2		1,3	+	-			
Analgesics. Narcotic analgesics. Antipyretic analgesics.	1	-	8	8	-	1,2,5	1,2	4	1,3	+	-			
Laboratory animal handling, anaesthesia and requirements.	-	1	4	-	4	-	3	3	2	-	+			
Isolated organ bath system (oscillograph) parts, applications and uses.	-	1	4	-	4	-	3	3	2	-	+			

Determination of drug actions on isolated tissue and organ preparations.	-	**1**	**12**	-	**12**	**1,2**	**3,4**	**1,2,3**	**2**	-	+			
Assessment of drugs actions on intact laboratory animals.	-	**1**	**12**	-	**12**	**1,2**	**3,4**	**1,2,3**	**2**	-	+			
Testing the effect of route of administration on drugs actions.	-	**1**	**8**	-	**8**	**1**	**3,4**	**1,2,3**	**2**	-	+			
Drug samples.	-	**1**	**4**	-	**4**	-	-	-	-	-	+			
Total			**88**	**44**	**44**									