



# Veterinary Pharmacology

## DIPLOMA COURSE SPECIFICATION

### A. BASIC INFORMATION

<b>University:</b>	<b>Sadat City</b>
<b>Faculty:</b>	<b>Veterinary Medicine</b>
<b>Program on which the course is given:</b>	<b>Diploma of Veterinary Pharmacology and Pharmaceuticals</b>
<b>Department offering the Course:</b>	<b>Pharmacology</b>
<b>Course code:</b>	<b>926</b>
<b>Course title:</b>	<b>Veterinary Pharmacology</b>
<b>Lecture (hr/week):</b>	<b>2</b>
<b>Practical (hr/week):</b>	<b>2</b>
<b>Course coordinator:</b>	<b>Dr. Mohamed El-Hewaity</b>

## **B. PROFESSIONAL INFORMATION**

### **1- Overall aim of course**

The aim of this course is to provide the diploma students with up- to- date basic information and knowledge about the general use of veterinary drugs in the Egyptian field, and the use of specific drugs for treatment of diseased conditions caused by different infective agents with thorough information on the side effects, interactions and the hazards of veterinary drugs uses on environment and human health like drug residues.

### **2- Intended learning outcomes of course (ILOs)**

#### **a-Knowledge and understanding**

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

- a.1.** Explain the basics of general pharmacology.
- a.2.** Recognize the drug residues and drug interactions.
- a.3.** Describe the specific drugs affecting the different body systems and organs beside autacoids and anti-inflammatory agents.
- a.4.** Discuss the chemotherapeutic agents .
- a.5.** Be aware with the drugs affecting metabolism and growth promoting agents .
- a.6.** Identify the better approach with drugs to various field problems.
- a.7.** Discuss in detail of ethical standards which will be developed in relation to veterinary drug therapeutics.

#### **b-Intellectual skills**

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

- b.1.** Analyze information about drugs in professional manner.
- b.2.** Criticize different treatment modalities in order to provide optimum drug therapy for animals.
- b.3.** Establish a good link between drugs and their economy use in the veterinary field.
- b.4.** Evaluate different adverse drug reactions
- b.5.** Use the appropriate laboratory animal or in-vitro test for a specific experiment

#### **c-Professional and practical skills**

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

- c.1.** Determine drugs actions and mechanism of actions in vitro and in vivo.
- c.2.** Prepare some pharmaceutical preparations essential for the field.
- c.3.** Choose drugs according to specific diseased conditions and the specific causative agent.
- c.4.** Handle of veterinary therapeutics problems as drug residues, drug interactions, drug side effects and toxicity...etc
- c.5.** Differentiate between different drug formulations.
- c.6.** Use appropriate basic laboratory equipments and animals safely and efficiently.

### **d-General and transferable skill**

**By the end of studying the course, the student should be able to**

**d.1.** Utilize library, computer and other resources to acquire, apply scientific knowledge in reports or presentations.

**d.2.** Work in team and apply time management principles effectively.

**d.3.** Identify and work to collective goals and responsibilities.

### **3- Topics and contents**

Topic	No. of hours		
	Lectures	Practical	Total
General pharmacology.	<b>10</b>		<b>10</b>
Drugs acting on the autonomic nervous system.	<b>8</b>	-	<b>8</b>
Autacoids and anti-inflammatory agents.	<b>8</b>	-	<b>8</b>
Drugs acting on the central Nervous system.	<b>10</b>	-	<b>10</b>
Drugs acting on the digestive, respiratory, cardiovascular, urinary and reproductive systems.	<b>14</b>	-	<b>14</b>
Drugs acting on the skin and eye.	<b>6</b>	-	<b>6</b>
Drugs affecting metabolism and growth promoting agents.	<b>8</b>	-	<b>8</b>
Chemotherapy.	<b>16</b>		<b>16</b>
Clinical pharmacology.	<b>8</b>	-	<b>8</b>
Drug forms and routes of drug administration.	-	<b>6</b>	<b>6</b>
Laboratory animal handling, anaesthesia and requirements.	-	<b>6</b>	<b>6</b>
Isolated organ bath system (oscillograph) parts, applications and uses.	-	<b>6</b>	<b>6</b>
Experimental pharmacology on isolated preparations.	-	<b>12</b>	<b>12</b>
Experimental pharmacology on intact animals.	-	<b>12</b>	<b>12</b>
Prescription writing , Posology and Metrology.	-	<b>8</b>	<b>8</b>
Compounding and dispensing of drugs.	-	<b>14</b>	<b>14</b>
Bioassay of drugs.	-	<b>10</b>	<b>10</b>
Plants and their active principles	-	<b>10</b>	<b>10</b>

Extraction of plants. Preliminary chemical investigation of active principles in plants. Separation of some active principles of plants. Astringent effect of drugs.			
Drug samples.	-	4	4
Total	88	88	176

#### 4- Teaching and learning methods

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

#### 5-Student assessment

##### 5.1. Assessments 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

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U (a)	I.S (b)	P&P.S (c)	G.S (d)
Written exam	1-7	2,3,4		
Practical exam		1, 5	1-6	
Oral exam	1,2,4,5	2,3,4		
Student activities (assay, seminar, etc.)	1,2,3,4	2,4		1-3

##### 5.2. 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

## 6- List of references

### 6.1. Departmental Notes

- ] **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.

### 6.2. Essential books

- ] **Joel G. Hardman, Lee E. Limbird and Alfred G. Gilman (2001):** Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 10<sup>th</sup> Edition.
- ] **Walter H. Hsu, William O. Reece and William J. Reece (2008):** Handbook of Veterinary Pharmacology, 1<sup>st</sup> edition.
- ] **H. Richard Adams (1995):** Veterinary Pharmacology and Therapeutics, 7th Edition.
- ] **G. C. Brander, D. M. Pugh, R. J. Bywater and W. L. Jenkins (1991):** Veterinary applied pharmacology and therapeutics , 5<sup>th</sup> Edition.
- ] **Merck, S. and Dohme , C. (2005) :** The Merck Veterinary Manual, 9<sup>th</sup> Edition.
- ] **Clive , P., Brian, H., Michael, C. and Michael, W. (2006):** Integrated Pharmacology: With Student Consult Access, 3rd Edition.
- ] **Heinz Lüllmann, M. D.,Klaus Mohr, M. D.,Albrecht Ziegler, Ph.D.,Detlef and Bieger, M. D. (2005):** Color Atlas of Pharmacology, 3rd edition.
- ] **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.

### 6.4. Journals , Websites .....etc

#### Journals:

- ] Journal of pharmacology and experimental therapeutics.
- ] British Journal of pharmacology.
- ] European Journal of Pharmacology.
- ] Pharmacology, Biochemistry and Behavior.

#### 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>  
) <http://www.ncbi.nlm.nih.gov>

**Course coordinator:**

**Dr. Mohamed El-Hewaity**

**Head of department:**

**Prof. Dr. Shabaan Gad Allah**

## 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
General pharmacology.	2	-	10	10	-	1,2	1	-	1-3	+	-			
Drugs acting on the autonomic nervous system.	2	-	8	8	-	3	1-5	3,4	1-3	+	-			
Autacoids and anti-inflammatory agents.	2	-	8	8	-	3	1-5	3,4	1-3	+	-			
Drugs acting on the central Nervous system.	2	-	10	10	-	3	1-5	3,4	1-3	+	-			
Drugs acting on the digestive, respiratory, cardiovascular, urinary and reproductive systems.	2	-	14	14	-	3	1-5	3,4	1-3	+	-			
Drugs acting on the skin and eye.	2	-	6	6	-	3	1-5	3,4	1-3	+	-			
Drugs affecting metabolism and growth promoting agents.	2	-	8	8	-	5	1-5	3,4	1-3	+	-			
Chemotherapy.	2	-	16	16	-	4	1-5	3,4	1-3	+	-			
Clinical pharmacology.	2	-	8	8	-	6,7	1-5	3,4	1-3	+	-			
Drug forms and routes of drug administration.	-	2	6	-	6	-	-	5,6	2	-	+			
Laboratory animal handling, anesthesia and requirements.	-	2	6	-	6	-	5	6	2	-	+			

Isolated organ bath system (oscillograph) parts, applications and uses.	-	2	6	-	6	-	5	6	2	-	+			
Experimental pharmacology on isolated preparations.	-	2	12	-	12	-	5	1	2	-	+			
Experimental pharmacology on intact animals.	-	2	12	-	12	-	5	1	2	-	+			
Prescription writing , Posology and Metrology.	-	2	8	-	8	-	-	2	2	--	+			
Compounding and dispensing of drugs.	-	2	14	-	14	-	5	2	2	-	+			
Bioassay of drugs.	-	2	10	-	10	-	5	1	2	-	+			
Plants and their active principles Extraction of plants. Preliminary chemical investigation of active principles in plants. Separation of some active principles of plants. Astringent effect of drugs.	-	2	10	-	10	-	5	1	2	-	+			
Drug samples.	-	2	4	-	4	-	-	-	-	-	+			
Total			176	88	88									