Specifications for Special Pharmacology course

2025/2026

1-Basic information

1	**Course title**	Special Pharmacology							
2	**Course code**	PHA.321							
3	**Department/s participating in delivery of the course**	**Pharmacology**							
4	**Number of hours**	Theoretical	2	Practical	1(2)	Other	0	Total	3(4)
5	**Course Type**	√ **Obligatory** **Elective**							
6	**Level**	3rd year							
7	**Semester**	Spring							
8	**Academic program**	Bachelor of Veterinary Medicine (BVM)							
9	**Faculty**	Veterinary medicine							
10	**University**	Benha University							
11	**Name of course coordinator**	Prof. Dr. Abubakr El-Mahmoudy							
12	**Course Specification Approval Date**	Faculty council/ 27-8-2025							
13	**Course Specification Approval (Attach the decision/minutes of the department /committee/council ....)**	Department council/ 16/7/2025							

2-Course overview

- **Course contents written in the program bylaw:**

Cardiovascular system; respiratory system; Digestive system; Reproductive system, Drugs acting on skin and eye; chemotherapy (Sulphonamides, antiviral, anthelminitics, antiseptics and disinfectants, antiprotozoal drugs); clinical pharmacology; insecticides.

3- Intended learning outcomes of the course (CLOs):

	NARS ILOS		Course ILOS	
	Code	**Context**	**Code**	**Context**
Knowledge and understanding	2.8	Veterinary medications, uses, marketing, the impact of drug residues on human health and quality control of pharmaceutical practices.	a1	write a proper prescription on scientific basis for curing a case (Dispensing).
			a2	dispense certain drug formulas that are not available on the drug market (Dispensing).
			a3	mention drugs affecting hormones, metabolism and growth (Endocrine and Metabolic Pharmacology).
			a4	mention a proper chemotherapeutic drug specific for treating a disease caused by certain microorganism sensitive to the selected drug (Chemotherapy).
	2.14	Basics of law and ethical codes relevant to animals and food hygiene	a.5	define the general measures taken to deal with a case of drug overdose (Drug Toxicology).
			a.6	decide drugs of choice in a prescription for treating a diseased condition (Clinical Pharmacology).
Intellectual skills	4.2	Assess and criticize, at the fundamental level, how data are derived.	b1	think about the drugs which are compatible together for treating a case.
			b2	think about and to decide the best drug to which certain microorganism is sensitive.
	4.5	Remain committed to life – long learning and updating / upgrading their biochemical sense and clinical skills.	b3	deal with a case of drug toxicity and to take measures which help fast and complete clearance of the overdose of the drug
Professional and practical	3.5	Appropriately select and interpret	c1	write a complete prescription for a diseased case.
			c2	perform in the lab some simple pharmaceutical

skills General skills		findings of the common clinical and laboratory diagnostic procedures to reach and adopt the most convenient therapeutic and manage mental approach		processes.
	3.8	Skillfully and appropriately gain and use new information remain current with the emerging biomedical knowledge and therapeutic options.	c3	dispense in the lab some drug formulae that are not available in the market.
	5.1	Work under pressure and / or contradictory conditions.	d1	Work under pressure during pharmacology lab cession
	5.5	Search for new information and technology as well as adopt life–long self-learning ethics.	d2	Search for new information in field of pharmacology
	5.6	Utilize computer and internet skills.	d3	Utilize computer and internet skills, read paper via internet in field of pharmacology

4- Teaching and learning methods					
Lectures	√	**Discussion & seminar**	√	**Practical**	√
Presentation & movies	√	**Problem solving**	√	**Brain storming**	√
Others	On line recorded video lectures				

- Course contents:

Weeks [W]	Topics	Total Weekly hours	Theoretical teaching (lectures/discussion groups/ .....)	Training (Practical/ Clinical/ .....)	Self-learning (Tasks/ Assignments / Projects/ ...)	Others to be determined
W1	Antibacterials: Classification, sulphonamides. Pharmaceutical processes (Liquid)	**3(4)**	**2**	**1(2)**		**0**
W2	Antibacterials: Penicillins, cephalosporins, polymyxins. Pharmaceutical processes (Solids/Semisolids)	**3(4)**	**2**	**1(2)**		**0**
W3	Antibacterials: Aminoglycosides, macrolides, tetracyclines, miscellaneous . Metrology	**3(4)**	**2**	**1(2)**	**Formative quiz**	**0**
W4	Endocrine Pharmacology: Classification, hypothalamic drugs, Tropic drugs, oxytocics, antidiuretics. Prescription writing	**3(4)**	**2**	**1(2)**		**0**
W5	Endocrine Pharmacology: Mineralocorticoids drugs, glucocorticoid drugs, thyroid/antithyroid drugs. Dispensing solutions	**3(4)**	**2**	**1(2)**		**0**

W6	Endocrine Pharmacology: Antidiabetic drugs: insulins/oral, reproductive drugs . Dispensing Tinctures.	**3(4)**	**2**	**1(2)**	**Formative quiz**	**0**
W7	Sesmster work (one hour exam)	**-**	**-**	**-**		**-**
W8	Anthelmintics: Classification, Benzimidazoles, Imidazothiazoles, Tetrahydropyrimidines. Dispensing Lotions.	**3(4)**	**2**	**1(2)**		**0**
W9	Anthelmintics: Avermectins, Piperazines, Organophosphates, Heart worm adulticides, Antitrematodals, Anticestodals . Dispensing Emulsions.	**3(4)**	**2**	**1(2)**		**0**
W10	Growth promotors: non-hormonal, hormonal, prebiotics, probiotics Antimycotics: wall inhibitors, membrane inhibitors, nucleic acid inhibitors. Dispensing Liniments.	**3(4)**	**2**	**1(2)**	**Formative quiz**	**0**
W11	Antiprotozoals: Anti-blood parasites, anti-tissue parasites. Antivirals: Antimetabolites, alkylating agents, nucleic acid inhibitors, protease inhibitors, penetration inhibitors. Dispensing Ointments.	**3(4)**	**2**	**1(2)**		**0**
W12	Drug Toxicology: Types of drug toxic effects, factors modifying drug toxicity, General and special treatments, antidotes, examples .	**3(4)**	**2**	**1(2)**		**0**

	Dispensing Electuaries.					
W13	Clinical Pharmacology: Prescriptions and Patent preparations used for common disease conditions . Dispensing Electuaries.	**3(4)**	**2**	**1(2)**		**0**
W14	Clinical Pharmacology: Prescriptions and Patent preparations used for common disease conditions . Demonstrations.	**3(4)**	**2**	**1(2)**	**Formative quiz**	**0**
W15	Practical exam	-	-	-		-

5- Assessment timing and grading:

a- Assessment methods (summative and formative)

1. **Formative assessment**: including (weekly quizzes, homework assignments and surveys).
2. **Summative assessment** including (quizzes, class activities, semester work (one hour exam), practical exam, oral exams and final written exams).

b- Assessment schedule and weight

Assessment method	Assessment Timing (Week Number)	Marks/ Scores	Percent Percentage of total course Marks
Semester work including one hour exam	7th week	10	10%
Formative assessment	Throughout the semester	-------	-------
Practical exam	15th week	30	30%
oral exam	End of semester	10	10%
Written exam	End of semester	50	50%
Assignments / Project /Portfolio/ Logbook	--------	5	marks included with the Practical
Field training	--------	----------	-------
Other (Mention)	-------	--------	-------
Total		100	100%

6- Learning resources and supportive facilities:

Learning resources	**Main reference**	**Student handbook**: Pharmacology & Therapeutics for Veterinary Medical Students (2007). Edit by Staff members
	Essential books (text books)	Handbook of Veterinary Pharmacology (2008). Walter H. Hsu, 1st Edition, Wiley-Blackwell Publishing, Iowa, USA.
	Recommended books	Goodman and Gilman's The Pharmacological Basis of Therapeutics 13e (2018). McGraw-Hill Education (USA). - Veterinary Pharmacology and Therapeutics (2018). 10th ed., by Jim E. Riviere & Mark G. Papich, John Wiley & Sons, Inc USA. - Saunders Handbook of Veterinary Drugs Small and Large Animals, 4ed., 2016. Papich, M. G. Elsevier, USA.
	Periodicals, Web sites, . . . etc	- Pharmacology Research - Journal of Vet. Pharmacology and Therapeutics. - British Journal of Pharmacology - http://www.fda.gov (Food & Drug Administration web site) - http://www.aspet.org/public/pharm_resources/default.html (Pharmacology resources) - http://www.merckvetmanual.com (Veterinary encyclopedia)
	Learning platform	Thinqi
supportive facilities	**Devices & instruments**	Mortars & Pestels, Spatula, Digital balances, Graduated cylinders, Graduated pipettes, Beakers, Glass funnels, Manual glass pipettes, Automatic pipettes, Vortex mixer, Magnetic stirrers, Glass rods, Glass boards, Syringes Bottles with stoppers, Red & white labels, water bath, distillator, Data show.
		- A well-prepared and equipped classroom and lab for Pharmacology. - Stocks of drugs and chemicals. - Simplified machines for drug formulations (Teaching Drug Factory)

Matrices:

A- Content and ILOs matrix:

Assessment	ILOs			
	Knowledge and understanding	**Intellectual**	**Professional and practical**	**General and transferable**
Antibacterials	a1-a6	--	--	d1-d3
Endocrine Pharmacology	a1-a6	b1 – b3	c1-c3	d1-d3
Anthelmintics	a1-a6	b1 – b3	c1-c3	d1-d3
Growth promotors Antimycotics	a1-a6	b1 – b3	c1-c3	d1-d3
Antiprotozoals Antivirals	a1-a6	b1 – b3	c1-c3	d1-d3
Drug Toxicology	a1-a6	b1 – b3	c1-c3	d1-d3
Clinical Pharmacology	a1-a6	b1 – b3	c1-c3	d1-d3

B- Teaching and learning methods and ILOs matrix:

ILOs		Teaching and Learning methods						
		L	P&M	D	P	Ps	Bs	FV
Knowledge and understanding	a1	√	√	√			√	
	a2	√	√	√			√	
	a3	√	√	√			√	
	a4	√	√	√			√	
	a5	√	√	√			√	
	a6	√	√	√			√	
Intellectual skills	b1	√	√	√		√	√	√
	b2	√	√	√		√	√	√
	b3	√	√	√		√	√	√
Professional and practical skills	c1		√	√	√	√		√
	c2		√	√	√	√		√
	c3		√	√	√	√		√
General skills	d1		√	√			√	
	d2	√				√	√	√
	d3	√		√	√			√

L :Lecture, P&M: Presentations & Movies, D&S: Discussions & Seminars P: Practical Ps: Problem solving, Bs: Brain storming

C- Assessment methods and ILOs matrix:

ILOs		Assessment methods				
		Formative assessment	Semester	oral	practical	written
Knowledge and understanding	a1	√	√	√		√
	a2	√	√	√		√
	a3	√	√	√		√
	a4	√	√	√		√
	a5	√	√	√		√
	a6	√	√	√		√
Intellectual skills	b1		√	√		√
	b2		√	√		√
	b3			√		√
Professional and practical skills	c1					
	c2					
	c3			√	√	
General skills	d1			√		
	d2			√		
	d3			√		

-Course coordinator:

Prof. Dr. Abubakr El-Mahmoudy

-Program coordinator:

Prof. Dr. Mahmoud Abouelroos