ARAWALI VETERINARY COLLEGE

Department of Veterinary Pharmacology and Toxicology

LECTURE SCHEDULE (as per MSVE 2016 Regulation)

Name of the Course	**B.V.Sc & A.H**
Name of the subject	**Veterinary Pharmacology and Toxicology**
Professional Year	**2025-2026**
Credit Hours	**4+1**

THEORY		
Lecture No.	**Topic**	**Name of Course Teacher**
UNIT- 1: GENERAL PHARMACOLOGY		
1-2	Introduction, historical development, branches and scope of Pharmacology	Dr. R.D. Rana
3	Sources and nature of drugs	Dr. R.D. Rana
4	Pharmacological terms and definitions, nomenclature of drugs.	Dr. Naveen Kumar
5	Principles of drug activity: Pharmacokinetics - Routes of drug administration, absorption, distribution, biotransformation and excretion of drugs	Dr. Naveen Kumar
6-9	Pharmacodynamics - Concept of drug and receptor, dose-response relationship, terms related to drug activity and factors modifying the drug effect and dosage	Dr. Naveen Kumar
10-11	Drug interactions	Dr. Haritha C.V.
12	Adverse drug reactions	Dr. Ravindra Pal
UNIT- 2: DRUGS ACTING ON AUTONOMIC NERVOUS SYSTEM		
13-15	Neurohumoral transmission, Pharmacology of neurotransmitters.	Dr. Naveen Kumar
16-17	Adrenoceptors agonists and antagonists, adrenergic neuron blockers	Dr. Ravindra Pal
18-19	Cholinoceptor agonists and antagonists	Dr. Ravindra Pal
20-22	Autacoids: Histamine, histamine analogues and antihistaminic agents	Dr. Haritha C.V.
23-24	5-Hydroxytryptamine and its agonists and antagonists, eicosanoids	Dr. Haritha C.V.
25-27	Platelet activating factors, angiotensin, bradykinin and kallidin	Dr. Haritha C.V.

THEORY		
Lecture No.	**Topic**	**Name of Course Teacher**
UNIT- 3: DRUGS ACTING ON CENTRAL NERVOUS SYSTEM		
28-29	Classification of drugs acting on CNS	Dr. Naveen Kumar
30-31	History, mechanism and stages of general anesthesia	Dr. Naveen Kumar
32-34	Inhalant, intravenous and dissociative anesthetics	Dr. Naveen Kumar
35-38	Hypnotics and sedatives	Dr. Haritha C.V.
39-40	Psychotropic drugs, anticonvulsants	Dr. Haritha C.V.
41-43	Opioid analgesics, non-steroidal anti-inflammatory drugs	Dr. Haritha C.V.
44-45	Analeptics and other CNS stimulants	Dr. Ravindra Pal
46-49	Drugs acting on somatic nervous system: Local anaesthetics, muscle relaxants	Dr. Ravindra Pal
50	Euthanizing agents	Dr. Ravindra Pal
UNIT- 4: DRUGS ACTING ON DIFFERENT BODY SYSTEMS		
51-53	Drugs acting on digestive system: Stomachics, antacids and antiulcers	Dr. Ravindra Pal
54-57	Prokinetics, carminatives, antizymotics, emetics, antiemetics	Dr. Ravindra Pal
58-59	Purgatives, antidiarrhoeals, choleretics and cholagogues	Dr. Ravindra Pal
60	Rumen pharmacology	Dr. Ravindra Pal
61-64	Drugs acting on cardiovascular system: Cardiotonics and cardiac stimulants	Dr. Haritha C.V.
65-67	Antiarrhythmic drugs, vasodilators and antihypertensive agents, hematopoietic drugs, coagulants and anticoagulants	Dr. Haritha C.V.
68-69	Drugs acting on respiratory system: Expectorants and antitussives, respiratory stimulants, bronchodilators and mucolytics	Dr. Ravindra Pal
70-73	Drugs acting on urogenital system: Diuretics, drugs affecting urinary pH and tubular transport of drugs, ecbolics and tocolytics	Dr. Ravindra Pal
74-76	Pharmacological basis of fluid therapy. Pharmacotherapeutics of hormones.	Dr. Haritha C.V.
77-78	Drugs acting on skin and mucous membranes: Emollients, demulcents and counter irritants.	Dr. Haritha C.V.

THEORY		
Lecture No.	**Topic**	**Name of Course Teacher**
UNIT- 5: VETERINARY CHEMOTHERAPY		
79	Introduction and historical developments of chemotherapy	Dr. Haritha C.V.
80-83	Antimicrobial agents: Classification, general principles in antimicrobial chemotherapy, antimicrobial resistance, combined antimicrobial therapy	Dr. Haritha C.V.
84	Sulphonamides and their combination with diaminopyrimidines	Dr. Haritha C.V.
85-87	Penicillins, cephalopsorins, cephamycins and other beta lactams, beta lactamase inhibitors	Dr. Haritha C.V.
88	Aminoglycosides and aminocyclitols	Dr. Haritha C.V.
89-91	Tetracyclines, amphenicols (chloramphenicol, thiamphenicol, florfenicol), macrolides	Dr. Haritha C.V.
92	Quinolones and fluoroquinolones	Dr. Ravindra Pal
93-94	Polypeptides (polymixins, bacitracin) and glycopeptide antibiotics	Dr. Ravindra Pal
95-96	Miscellaneous agents: Lincosamides, novobiocin, virginiamycin, tiamulin, nitrofurans and methenamine	Dr. Ravindra Pal
97-98	Antitubercular drugs	Dr. Ravindra Pal
99-100	Antifungal agents: Topical and systemic agents including anti-fungal antibiotics	
101-103	Antiviral and anticancer agents	Dr. Ravindra Pal
104-106	Anthelmintic: Drugs used against nematodes, cestodes, trematodes	Dr. Ravindra Pal
107-109	Antiprotozoal agents: Drugs used in trypanosomosis, theileriosis, babesiosis, coccidiosis, amoebiosis, giardiosis and trichomoniasis	
110-111	Ectoparasiticides	Dr. Ravindra Pal
112-113	Antiseptics and disinfectants. Pharmacology of drugs of abuse in animals	Dr. Ravindra Pal
114-116	Pharmacology of indigenous medicinal plants: Scientific name, common name, active principles, pharmacological actions and therapeutic uses	Dr. Ravindra Pal

THEORY		
Lecture No.	**Topic**	**Name of Course Teacher**
UNIT- 6: VETERINARY TOXICOLOGY		
117-118	General Toxicology: Definitions, history of toxicology, fundamentals and scope of toxicology	Dr. Naveen Kumar
119-121	Sources and classification of toxicants, factors modifying toxicity, general approaches to diagnosis and treatment of poisoning	Dr. Naveen Kumar
122-126	Toxicity caused by metals and non-metals: Arsenic, lead, mercury, copper, molybdenum, selenium, phosphorus, fluoride, nitratesor nitrites, chlorate, common salt and urea	Dr. Naveen Kumar
127-130	Toxicity caused by Agrochemicals: Insecticides – Chlorinated hydrocarbons, organophosphates, carbamates, pyrethroids, newer insecticides.	Dr. Naveen Kumar
131-132	Herbicides, fungicides and rodenticides	Dr. Naveen Kumar
133-135	Fungal and bacterial toxins: Aflatoxins, rubratoxin, ochratoxin, sporidesmin, citrinin, F-2 toxin, trichothecenes, ergot, fescue, botulinum toxin and tetanus toxin	Dr. Haritha C.V.
136-137	Venomous bites and stings: Snake, scorpion, spider, bees and wasp, toad and fishes (puffer fish, shellfish)	Dr. Haritha C.V.
138-139	Toxicity caused by food additives and preservatives. Drug and pesticide residue toxicology	Dr. Ravindra Pal
140	Environmental pollutants: Air and water pollutants.	Dr. Ravindra Pal
141	Concept of radiation hazards	Dr. Ravindra Pal

PRACTICAL		
Lectures No.	**Topic**	**Name of Course Teacher**
UNIT- 1: GENERAL PHARMACOLOGY		
1	Handling and washing of laboratory wares. Handling and operation of commonly used laboratory instruments	Dr. Naveen Kumar
2	Concept of good laboratory practices (GLP). Pharmacy appliances.	Dr. Naveen Kumar
3-4	Principles of compounding and dispensing. Metrology, systems of weights and measures, pharmacy calculations	Dr. Naveen Kumar
5	Pharmaceutical processes. Pharmaceutical dosage forms	Dr. Naveen Kumar
6	Prescription writing, incompatibilities	Dr. Naveen Kumar
7-8	Drug standards and regulations, custody of poisons	Dr. Ravindra Pal
9-10	Compounding and dispensing of powders, ointments, mixtures, liniments, lotions, liquors, tinctures, emulsions and electuaries	Dr. Naveen Kumar
UNIT- 2: ANS PHARMACOLOGY		
11-12	Demonstration of the action of autonomic agonists and antagonists on intact or isolated preparations of the laboratory animals	Dr. R.D. Rana
13-14	Simulated animal experiments should be preferred over use of live animals	Dr. R.D. Rana
15-16	The lab for simulated experiments should be established within a span of one year	Dr. R.D. Rana
UNIT- 3: CNS PHARMACOLOGY		
17	Handling of lab animals	Dr. R.D. Rana
18-19	Regulatory guidelines for use of lab animals. Demonstration of the effect of CNS active drugs and local anesthetics in laboratory animals.	Dr. R.D. Rana
20-21	The lab for simulated experiments should be established within a span of one year	Dr. R.D. Rana
UNIT– 4: VETERINARY CHEMOTHERAPY		
22-23	Demonstration of various chemotherapeutic agents and their dosage forms.	Dr. Ravindra Pal
24-25	Demonstration of antibiotic sensitivity test and its interpretation	Dr. Haritha C.V.
UNIT- 5: VETERINARY TOXICOLOGY		
26	Collection, preservation and dispatch of material for toxicological analysis	Dr. Naveen Kumar
27	General principles for toxicological analysis	Dr. Naveen Kumar
28	Detection of heavy metals or non-metals or plant poisons	Dr. Naveen Kumar
29-31	Demonstration of agrochemical toxicity and its antidotal therapy via simulation methods	Dr. Naveen Kumar
32-34	Demonstration of toxic weeds and plants of local area	Dr. Naveen Kumar
35	Methods of calculation of median lethal dose (LD50) or maximum tolerated dose (MTD)	Dr. Naveen Kumar