

# V T 83: PHARMACOLOGY FOR VETERINARY NURSES

## Foothill College Course Outline of Record

Heading	Value
<b>Units:</b>	4
<b>Hours:</b>	4 lecture per week (48 total per quarter)
<b>Prerequisite:</b>	V T 54B.
<b>Degree &amp; Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade Only
<b>Repeatability:</b>	Not Repeatable

## Student Learning Outcomes

- Know and articulate "The Five Rights" for safe and correct administration of veterinary drugs to animal patients.
- List and discuss the mechanism of action, indications, contraindications, and adverse effects of the common veterinary pharmaceuticals in all drug classes.

## Description

Introduction to the basic principles of veterinary pharmacology. Preparation and dispensing of medications. Overview of the actions and interactions of the major classes of drugs, with emphasis on common veterinary uses of specific drugs. Intended for students in the Veterinary Technology Program; enrollment is limited to students accepted in the program.

## Course Objectives

The student will be able to:

- identify and describe the basic principles of pharmacokinetics, including: absorption, distribution, bioavailability, partition coefficients and solubility, pH and pKa, biotransformation, and elimination.
- identify and describe the basic principles of pharmacodynamics, including: mechanisms of drug action, dose-response relationships, therapeutic index, antibiotic resistance, and drug interactions.
- describe various dosage forms and routes of administration of veterinary drugs, and differentiate them based on their advantages and disadvantages.
- demonstrate pharmacy organization.
- recognize controlled substances and describe their proper storage and handling.
- differentiate the common pharmaceuticals used in veterinary medicine in terms of their classification, indications and clinical uses, biological actions, routes of administration, dosage range, and possible adverse reactions.

## Course Content

- Principles of pharmacokinetics
  - Absorption, distribution, biotransformation, elimination
  - Bioavailability, partition coefficients and solubility, pH and pKa
  - Routes of administration
  - Species differences

- Principles of pharmacodynamics
  - Mechanisms of drug action
  - Receptor theory and dose-response relationships
  - Therapeutic index; margin of safety
  - Antibiotic resistance
  - Drug interactions and adverse reactions
  - Dosage forms; drug preparation and dispensing; drug administration
- Pharmacy organization; inventory; drug storage and disposal
  - Demonstrate a working vocabulary in pharmacology, and identify drugs by their generic and proprietary names
  - Identify principles of drug handling and administration
  - Identify principles of pharmacy organization, inventory, and proper drug storage and disposal
- Controlled substances and D.E.A. regulation
- Classification of common pharmaceuticals used in veterinary medicine

- Antiinfective drugs
  - Sulfonamides
  - Antibiotics
  - Antifungal drugs
  - Anthelmintics
  - Insecticides
- Antiinflammatory drugs
  - Glucocorticosteroids
  - Non-steroidal antiinflammatory drugs
  - Antihistamines
  - Miscellaneous antiinflammatory drugs
- Cardiovascular drugs
  - Inotropes
  - Antiarrhythmic drugs
  - Vasodilator drugs
  - Adjunctive drugs for treatment of cardiac failure or cardiac emergencies
  - Anticoagulants
- Drugs affecting the gastrointestinal tract
  - Emetics and antiemetics
  - Antidiarrheal drugs
  - Drug therapy for gastrointestinal ulceration
  - Cathartics, laxatives, enemas
  - Adsorbents and protectants
- Diuretics and other drugs affecting the urinary system
- Drugs affecting the endocrine system
- Drugs affecting the central nervous system
  - Autonomic nervous system drugs
  - Anticonvulsants
  - Tranquilizers and sedatives
  - Barbiturates
  - Narcotics
  - Dissociative anesthetics
  - Inhalant anesthetics

## Lab Content

Not applicable.

## Special Facilities and/or Equipment

- Classroom with projection capabilities.
- Representative veterinary pharmaceuticals for demonstration.

## Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

- A. Written quizzes and examinations
- B. Reading assignments
- C. Emphasis is on skill development and hands-on experience in all required areas; practical training in the American Veterinary Medical Association Committee on Veterinary Technician Education and Activities List of Essential Skills Expected of Graduate Veterinary Technicians, using a set of standard criteria as a guideline for the accomplishment of performance objectives

## Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

- A. Lecture
- B. Discussion
- C. Independent study

## Representative Text(s) and Other Materials

Wanamaker, Boyce P, and Kathy L. Massey. Applied Pharmacology for Veterinary Technicians. 5th ed. Missouri: Saunders, 2014.

Although this text is older than the suggested "5 years or newer" standard, it remains seminal in this area of study.

## Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

- A. Weekly reading assignments from text, class handouts, and outside sources, ranging from 30-60 pages per week
- B. Creation of pharmacology "nerd book"

## Discipline(s)

Registered Veterinary Technician