

# Northwestern CT Community College

## COURSE SYLLABUS

**Course Title:** Principles of Pharmacology

**Course #:** VET\* 250

**Course Description:** 3 credits (3 lecture hours)

This course provides an overview of the more commonly prescribed medications as they relate to specific body systems. Topics include practices governing the use, dispensing, administration, and storage of pharmaceuticals. Terminology relating to drugs and administration of drugs is emphasized. The student will understand mechanisms of drug actions, common drug interactions and side effects, and will become familiar with the more commonly prescribed drugs. The student will be able to perform basic mathematical calculations of drug dosages.

**Pre-requisites:** MED\* 125, VET\* 101

**Goals:**

The student will develop the working knowledge of pharmacology necessary for a career in Veterinary Technology. Students will apply the skills gained in pharmacology in laboratory courses that require administering medications to live animals and calculating drug dosages. Satisfactory completion of Principles of Pharmacology will prepare the student for the pharmacology questions of the National Veterinary Technician Exam.

**Outcomes:** Upon successful completion of this course, the student will be able to:

- State the legalities involving medications that govern veterinary technicians.
  - Name the organizations that regulate controlled substances and prescription drugs in the United States and describe the role of these agencies
  - Explain the sources from which veterinary practices may legally purchase biologics, drugs, and pesticides that will be dispensed to clients.
  - Describe the manufacturer's label statements for prescription and OTC drugs
  - Define the VCPR and AMDUCA and explain how their effects on the ability to dispense prescription medications to clients for use on veterinary patients.
    - Define extra-label drug use
  - Describe the legal liabilities and limitations that must be considered when selling prescription or therapeutic diets.
  - Describe how to store biologics, OTC products, and prescription medications in a veterinary practice.
  - Identify controlled substances and determine to which Schedule they belong based upon manufacturer's labeling.
  - Describe how to properly store controlled drugs in a veterinary practice, how to dispose of these drugs, and the procedures used to transfer controlled substances between facilities
  - Document administered medications in a simulated controlled substances log.

- State how frequently controlled substances must be inventoried by Federal and State Law, and describe how the inventory procedure is performed.
- Define what is meant by milk and meat withdrawal periods and list sources available to determine appropriate withdrawal times.
- Describe the appropriate methods to dispose of expired drugs, vaccines, and pesticides.
- Demonstrate the appropriate disposal of needles, syringes, and biologicals.
- Interpret medication labels, veterinarians' orders, and prescriptions
  - Define the common abbreviations used in prescriptions
  - Using simulated drugs, correctly fill a written medication order, including selecting the ordered medication from the pharmacy, correctly counting the medication for oral administration, and correctly packaging the medication including properly filling out the prescription label.
  - Correctly measure volume for parenteral injections including choosing the appropriate syringe and needle.
  - Identify prescription vs. OTC drugs based upon manufacturer's labels.
- Accurately perform drug calculations
  - Calculate the proper dosage ordered given drug labels
  - Accurately convert weights, volumes, and body surface area within/between the metric, English, household and apothecary systems.
  - Given an animal's weight, dosage rate and concentration of the drug, accurately determine a drug dose for tablets, capsules, and liquids, and calculate the total number of tablets/capsules/boluses or total volume of liquid that must be dispensed.
  - Accurately calculate the amount of solute needed to create a solution of a given concentration.
  - Accurate calculate the amount of diluent that needs to be added to a stock solution to acquire a given concentration.
- Explain routes and methods of administration
  - Define parenteral and enteral
  - List the properties of drugs that affect drug administration and route selection via the IV, IM, SQ, and enteral routes
  - List species and breed differences that affect drug selection and route of administration
- Describe drugs used in veterinary clinical practice
  - Demonstrate the use of the Physician's Desk Reference, the Compendium of Veterinary Products, and Veterinary Pharmaceuticals and Biologicals
  - Identify commonly used drugs in veterinary practice, classify them based upon therapeutic use, describe their mechanism of action, and describe adverse side effects of each drug.
  - Discuss the more commonly used vaccines including mechanism, implications, routes of administration, effects, and client education.
  - List possible adverse reactions to vaccination and describe proper management of patients exhibiting local and systemic reactions.