Course Information Form (CIF)

Course Code: VTT 119

Course Title: Pharmacology I

Department: Allied Health
PCS Code: 1.2 - Occupational/Technical Instruction
CIP Code: 26.1001
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 3-0-3
Credit Hour Distribution:

Lecture: 3	Lab: 0	Clinical: 0	**Total: 3**

General Course Information

Catalog Description

Basic concepts, terminology, references, and procedures necessary to dispense/administer drugs under the supervision of a veterinarian. Uses, actions, and secondary effects of common veterinary drugs. Mathematics necessary for veterinary professionals.

General Course Objectives

- Given the generic name of a commonly used veterinary drug, the student will be able to tell what drug category it belongs to and to describe its use, action, common secondary effects, and contraindications. The student will demonstrate appropriate client education related to the dispensing of these drugs and be able to accurately solve dilution problems and calculate the number of ml, tablets, or capsules to administer or dispense.
- Students will demonstrate understanding of pharmacodynamics and pharmacokinetics and be able to describe laws relating to the purchase, use, and dispensing of veterinary drugs.
- Students will use common drug reference resources and correctly interpret information on drug labels.

Minimum Placement Levels

English	Reading	Math
Placement out of ENG 099	Placement out of CCS 099	Placement out of MAT 072

Prerequisites

Concurrent enrollment in VTT 110, VTT 113, VTT 114, and VTT 116
Admission into the Veterinary Technology program

Methods of Evaluation

3-6 quizzes, 5-10 homework assignments, midterm exam, and final exam.

Instructional Materials and Additional Supplies

Essential Calculations for Veterinary Technicians and Nurses, ISBN 9780702068072

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Course Introduction	1. Explain the role of a graduate technician regarding pharmaceuticals in a veterinary practice. 2. Describe the legal scope of CVT practice relating to pharmaceuticals. 3. Explain basic prescribing information.	2	0	0
Fractions, Decimals and Percents, Ratios	1. Convert between fractions, decimals, and percents, and solve word problems utilizing them. 2. Explain percentage as a tool for scaling. 3. Explain the importance of writing leading zeros when recording numbers less than 1 in decimal form in medical documents.	3	0	0
Constructing Numeric Expressions, Averages and Ranges, Scientific Notation, Ratios	1. Recall the meaning of and employ common mathematical symbols used in equations and inequalities. 2. Calculate the average and describe it using a range if given a data set. 3. Judge when laboratory results are better expressed as ranges vs averages. 4. Convert between scientific notation and standard notation. 5. Convert lab results reported in scientific notation in one unit of measure to standard notation in a different unit of measure.	1	0	0
Unit Conversions Within and Between Metric, Apothecary, and Household Systems of Measurement	1. Recognize base units and prefixes; use dimensional analysis to convert measures within the metric system and between household or apothecary systems to metric system. 2. Identify information needed to solve continuous rate infusion problems. Accurately calculate drip rate and total volume to administer per unit time, and total volume administered. 3. Discuss and give examples of the importance of including correct units when recording numbers in medical documents. 4. Use correct unit abbreviations when reading and writing medical documents.	3	0	0
Rounding, Math Conventions in Drug Dispensing	1. Report the reasons behind math conventions used in veterinary drug dispensing. 2. Solve dosage and dispensing problems.	1	0	0
Tablet and Capsule Problems	1. Identify information from patient records, prescriptions, drug formularies, and labels needed to solve tablet or capsule dosage problems. 2. Calculate the correct number of pills to dispense or administer. 3. Complete patient records. Interpret and use medical abbreviations used in recording prescription information.	6	0	0
Liquid Dosage Form Problems	1. Identify information from patient records, prescriptions, drug formularies, and labels needed to solve dosage problems involving injectable or orally administered liquid medications. 2. Calculate the correct number of milliliters to dispense or administer. 3. Illustrate the correct volume for 1 dose in a syringe. 4. Interpret and use medical abbreviations used in recording prescription information.	6	0	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
IV Fluids	1. Identify information needed to solve continuous rate infusion problems. 2. Accurately calculate drip rate and total volume to prepare per unit time, and total volume administered.	3	0	0
Orientation to Therapeutic Agents	1. Describe the role of the FDA and the drug approval process. Choose appropriate reference for information needed. 2. Distinguish between extra-label and approved drug usage. 3. Identify generic, trade, and chemical names of drugs on labels. 4. Use knowledge of terms commonly used as section headings in references to quickly find needed information for patient monitoring, drug administration, and dosage calculation.	4	0	0
Controlled Drug Laws	1. Identify the schedule of a controlled drug from the packaging. 2. Discuss legal procedures for ordering, storing, dispensing, disposing of, and maintaining inventory records for controlled drugs. 3. Explain the procedure for reporting theft or abuse of controlled substances.	1	0	0
Dispensing	1. Explain how to package and label drugs in a legal manner for dispensing. 2. Discuss the safety routine used to prevent errors. 3. Given a prescription, write or demonstrate giving instructions to a client. 4. Discuss how to avoid drug residues in food and describe how to document drug withdrawal times. 5. Explain laws relating to drug dispensing and implement them when completing case studies on dispensing drugs. 6. Interpret common abbreviations of Latin terms used in writing drug orders.	5	0	0
Pharmacokinetics and Pharmacodynamics	1. Describe how drugs interact with cells to cause a therapeutic effect. 2. List factors that affect the rates of drug absorption, distribution, biotransformation, and excretion. 3. Given information about a patient's behavior and symptoms, choose appropriate drug dosage form and route of administration. 4. Explain how genetics, age, and physiologic differences in individuals can alter the expected effect of pharmaceuticals.	3	0	0
Central Nervous System Drugs	1. Describe symptoms of acute and chronic pain. 2. Explain the physiology of pain and procedures to prevent wind-up. 3. Contrast opioids and NSAIDs. 4. Discuss common side effects of these drugs as well as contraindications. 5. Given the generic or a common brand name of a drug, categorize it as an opioid, NSAID, or anticonvulsant; list a common use, as well as any special monitoring, client education, or precautions. 6. Explain the treatment of status epilepticus and epilepsy. 7. Demonstrate educating a client on managing their epileptic pet.	2	0	0
Solution and Dilution Problems	1. Given directions for diluting a solution in ratio form, calculate and prepare the amount of stock solution and amount of diluent to mix to make a solution of a specified volume. 2. Accurately calculate and prepare the amount of stock solution and the amount of diluent to mix to produce a solution of a specified desired concentration.	3	0	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Antiseptics and Disinfectants	1. Compare and contrast antiseptics, disinfectants, and sterilization. 2. Explain the difference between terms used in the labeling and marketing of these products. 3. Explain how to properly disinfect equipment and surfaces and list factors that can cause disinfectant failure. 4. List examples of disinfectants or antiseptics in that category and discuss the antimicrobial spectrum and uses.	2	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	0	0