

NORTHWESTERN CONNECTICUT COMMUNITY COLLEGE

COURSE SYLLABUS

Course Title: Veterinary Laboratory Procedures Lecture AND Vet Procedures Lab

Course #: VET*205 and VET*205L

Course Description: 3 semester hours (2 hrs lecture/3 hrs lab) A study of veterinary clinical laboratory procedures including specimen collection, hematology, cytology, blood chemistry, urinalysis, and necropsy technique. Immunology and serology will also be discussed. Lecture incorporates heavy use of PowerPoint images of blood smears, urine, and cytology to aid in identification of cells and structures in the laboratory.

The primary source of blood and urine samples for laboratory will be surgery patients from VET*230 L, Anesthesia and Surgical Nursing Lab. In addition, field trips may be required to collect samples for lab.

Pre-requisite: MED* 125, VET* 151, and 152 or by permission

Co-requisite: VET*205 and VET*205L must be taken together.

Goals: This course is intended to provide the student with an understanding of the theory and the practical skills necessary to perform routine veterinary laboratory procedures

Outcomes: Upon completion of this course the student should be able to:

- explain the technician's role in the clinical lab setting
- demonstrate an understanding of clinical laboratory theory and its practical applications in veterinary medicine
- demonstrate an understanding of laboratory safety, quality control, and occupational hazards
 - describe how quality control would be implemented for common laboratory procedures
 - describe and demonstrate OSHA recommendations for safety including Personal Protective Equipment and handling of contaminated sharps and biomedical hazardous waste.
 - Describe proper handling of specimens to prevent transmission of zoonoses
 - Describe the safety plan and methods for decontaminating a spill in the laboratory.
- collect various specimens for analysis
 - identify the correct sample and container
 - demonstrate proper post-collection sample handling
 - collect voided urine samples from cats, dogs, and/or other available species
 - explain the advantages and disadvantages of cystocentesis, catheterization, and voided urine samples
- discuss proper laboratory techniques
 - list equipment needed for commonly performed in-house laboratory procedures
 - describe proper maintenance for this equipment

- competently perform a complete CBC, including indices, platelet and reticulocyte counts
 - collect and prepare samples for evaluation, including choosing the proper blood collection tube
 - properly perform hemoglobin, PCV, total protein, manual WBC, and automated CBC
 - perform microscopic examination of blood film.
 - Perform leukocyte differential and distinguish normal from abnormal findings
 - Evaluate erythrocyte morphology and distinguish normal from abnormal
 - Estimate platelet numbers
 - Calculate absolute values of WBCs and platelets
 - Correct WBCs for nucleated RBCs
 - Calculate MCV, MCH, and MCHC and recognize normal vs. abnormal results
 - Perform reticulocyte count using the correct equipment and stain, correctly perform calculations, and explain the significance of the results
 - Perform a manual and an automated platelet count
 - Properly calculate the platelet count with the manual method
 - Explain the significance of the platelet count and distinguish normal from abnormal results
- Perform an activated clotting time (ACT) test
 - Identify the proper equipment used in the evaluation
 - Competently carry out the test
 - Explain the significance of the results
- understand blood chemistry testing and the application of obtained results
- demonstrate an understanding of immunologic concepts and perform various testing procedures
- competently perform a urinalysis; including sediment evaluation
 - list descriptive terms used for physical examination of urine
 - measure specific gravity and explain the significance of it
 - identify the types of cells seen in microscopic examination of urine sediment
 - identify microorganisms and parasites that may be seen in urine
- understand cytological examinations, collection, and slide preparation
- competently set up a fecal and examine for parasites
- understand euthanasia techniques, necropsy techniques, and the proper disposal of dead animals