NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
VET 131 - CLINICAL PATHOLOGY I (3 CR.)

Course Description

Surveys techniques used in the veterinary hospital laboratory. Includes hematology and urinalysis. Emphasizes the use of microscope, automated laboratory equipment, and modern diagnostic procedures. Part I of III. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

General Course Purpose

The purpose of this course is to provide the student with a broad, yet detailed, knowledge of clinical laboratory techniques involving blood and urine. The student will learn to recognize both normal and abnormal cells. Emphasis will be placed on developing proper laboratory technique and understanding the technical and physiological limitations of each procedure.

Course Prerequisites/Corequisites

Enrollment is limited to those students program-placed in the veterinary technology curriculum or those students with special approval from the program head.

Course Objectives

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

- Make and stain an adequate peripheral blood smear and identify all of the cells
- Describe the basic morphological differences between the leukocytes and erythrocytes of equine, bovine, canine, feline, and avian species
- Perform a leukocyte differential and recognize normal and abnormal forms
- Recognize normal and abnormal erythrocyte morphology
- Demonstrate familiarity with the methods available for platelet enumeration and estimate their numbers
- Determine hemoglobin, hematocrit and total protein values
- Perform both manual and automated leukocyte and erythrocyte counts
- Prepare a reticulocyte smear and count them
- Compute the calculations for absolute values, correction of WBC counts, and the RBC indices
- Identify the major blood parasites
- Have a general knowledge of clotting principles and tests available
- Demonstrate familiarity with techniques of urine collection and sample handling
- Evaluate the physical properties of urine (color, clarity, specific gravity)
- Evaluate the chemical properties of urine (pH, blood, ketones, bilirubin, glucose, etc.)
- Examine the urine sediment microscopically

Major Topics To Be Covered

- Preparation and evaluation of a peripheral blood smear
- The basic morphology and function of leukocytes, erythrocytes and platelets in equine, bovine, canine, feline, and avian species

- Practical techniques in performing a complete blood cell count including leukocyte differential and recognition of normal and abnormal cell forms
- Techniques for performing platelet estimates
- Techniques to determine hemoglobin, hematocrit and total protein values
- Operation of automated hematology analyzers
- Preparation and evaluation of reticulocyte smears
- Calculations of absolute values, correction of WBC counts, and the RBC indices
- Identification of the major blood parasites
- Techniques of urine collection and sample handling
- Practical techniques for evaluation of the physical properties of urine (color, clarity, SpGr)
- Practical techniques for the evaluation of the chemical properties of urine (pH, blood, ketones, bilirubin, glucose, etc.)
- Microscopic examination of urine sediment