COMMON COURSE OUTLINE: Course discipline/number/title: VT 2820: Clinical Laboratory Techniques I

A. CATALOG DESCRIPTION

1. Credits: 3
2. Hours/Week: 5
3. Prerequisites (Course discipline/number): Grade of C or better in all required previous VT coursework and general education requirements.
4. Co-requisites (Course discipline/number): None
5. MnTC Goals (if any): NA

This is an advanced clinical laboratory course for veterinary technicians. Students will gain the knowledge and skills necessary to perform the various types of tests that are usually done in the clinical laboratory of a veterinary hospital. Topics will include: blood collection, CBC, WBC, blood film evaluation, leukocyte evaluation, coagulation testing, urinalysis, blood chemistries and blood parasites. RECOMMENDED ENTRY SKILLS/KNOWLEDGE: High School diploma or GED, Grade of C or better (high school or college level within the last five years) in the following courses: Biology with a lab, Chemistry with a lab, Elementary Algebra of equivalent Minimum one-year high school typing/keyboarding skills Completed previous VT courses with an overall GPA of 2.0

B. DATE LAST REVISED (Month, year): November, 2006

C. OUTLINE OF MAJOR CONTENT AREAS:

1. Introduction to hematology
2. Collecting and handling blood samples
3. Complete blood count
4. Red blood cell indices
5. Morphology
6. Blood film evaluation
7. Normal hematologic values
8. Assessing coagulation
9. Automated cell counters
10. Blood parasites
11. Introduction to urinalysis
12. Specimen collection
13. Urine evaluation
14. Microscopic evaluation
15. Urine properties

D. LEARNING OUTCOMES (GENERAL): The student will be able to:

1. Demonstrate proper urine collection techniques.
2. Determine physical properties of urine for gross examination.
3. Determine chemical properties of urine.
4. Identify normal urine properties.
5. Perform blood chemistry tests.
6. Describe various tests for evaluation of urine.
7. Describe various tests for evaluation of organ function.
8. Identify the significance of abnormal results of clinical chemistry.
9. Provide samples required and proper conditions under which the tests are perform.
10. Identify common tests that appear in various chemistry profiles.
11. Identify common laboratory test used to evaluate kidney, pancreatic, and liver function, as well as electrolytes and minerals, in small and large animals.
12. Demonstrate proper blood collection techniques.
13. Perform a packed cell volume and total protein.
14. Perform a white and red blood cell count.
15. Identify normal and abnormal blood values.
16. Perform a complete blood count.
17. Identify normal and abnormal cell morphology.
18. Demonstrate blood film preparation and staining techniques.
D. LEARNING OUTCOMES (GENERAL): Continued. . . The student will be able to:
   19. Identify blood parasites.
   20. Describe the various tests used for assessing blood coagulation.
   21. Collect voided urine samples for diagnostic testing.
   22. Identify safety and quality control techniques in the laboratory setting.
   23. Demonstrate proper use and maintenance of the microscope and laboratory equipment.
   24. Perform quality control procedures.
   25. Perform record keeping laboratory procedures.

E. LEARNING OUTCOMES (MNTC): NA

F. METHODS FOR EVALUATION OF STUDENT LEARNING:
Methods may include any of the following:
   1. Laboratory reports and/or quizzes
   2. Objective and/or subjective tests
   3. Laboratory practical tests
   4. Work related experience with skill competency record
   5. Course assignments
   6. Essay tasks
   7. Group work/projects
   8. Attendance (especially laboratory attendance)

G. SPECIAL INFORMATION (if any):
The initial lab session explains and familiarizes the student with general safety hazards and safety equipment to the lab. During the pre-lab discussion, the hazardous characteristics of any materials used during a lab are discussed. In addition, if the lab involves any potentially infectious or zoonotic material, the students will be instructed on the proper use and disposal. The instructor will direct all students to where necessary protective equipment while working with any hazardous chemicals. A copy of Material Safety Data Sheets for chemicals used is available in the lab.