

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

A. CATALOG DESCRIPTION

1. Credits: 3
2. Hours/Week: 1 Lecture, 4 lab
3. Prerequisites (Course discipline/number): VT 1410, VT 1710, VT 1810 VT 2900
4. Other requirements: To enroll in the course, all previous required courses must have been completed with a grade of C or better.
5. MnTC Goals (if any): NA

B. COURSE DESCRIPTION: This is a 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, urinalysis, and blood parasites. Attendance is required for successful completion of the course. To enroll in the course, all previous required courses must have been completed with a grade of C or better.

C. DATE LAST REVISED (Month, year): December, 2022

D. 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. Automated cell counters
9. Blood parasites
10. Introduction to urinalysis
11. Urine evaluation
12. Microscopic evaluation of urine
13. Urine properties

E. 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. Describe various tests for evaluation of urine.
6. Provide samples required and proper conditions under which the tests are performed.
7. Demonstrate proper blood collection techniques.
8. Perform a packed cell volume and total protein.
9. Perform a white and red blood cell count.
10. Identify normal and abnormal blood values.
11. Perform a complete blood count.
12. Identify normal and abnormal cell morphology.
13. Demonstrate blood film preparation and staining techniques.
14. Identify blood parasites.
15. Describe the various tests used for assessing blood coagulation.
16. Collect voided urine samples for diagnostic testing.
17. Identify safety and quality control techniques in the laboratory setting.
18. Demonstrate proper use and maintenance of the microscope and laboratory equipment.
19. Perform quality control procedures.
20. Perform record keeping laboratory procedures.

- F. LEARNING OUTCOMES (MNTC): NA
- G. METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to:
1. Laboratory reports
  2. Written exams
  3. Laboratory practical tests
  4. Work related experience with skill competency record
  5. Course assignments
  6. Essays
  7. Group work/projects
- H. RCTC CORE OUTCOME(S). This course contributes to meeting the following RCTC Core Outcome(s):  
Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.
- I. SPECIAL INFORMATION (if any):  
The initial lab session explains and familiarizes the student with general safety hazards and safety equipment in the lab. During the pre-lab discussion, the hazardous characteristics of any materials used during the lab are discussed. In addition, if the lab involves any potentially infectious material, the students will be instructed on the proper use and disposal. The instructor will direct all students to wear necessary protective equipment while working with any hazardous chemicals. A copy of Safety Data Sheets for chemicals used is available online.