

VS203
Laboratory Procedures II
3 Credits

Instructor: Brianne Bellwood
780 853 8788

Original Developer: Kari Roberts

Current Developer: Brianne Bellwood

Reviewer: Dr. Robyn Rodgers

Created: 07/01/2014

Revised: 26/08/2020

Approval: 27/08/2020

The Implementation Date for this Outline is 01/09/2020

Copyright©LAKELAND COLLEGE. Email: admissions@lakelandcollege.ca
2602 - 59 Avenue, Lloydminster, Alberta, Canada T9V 3N7. Ph: 780 871 5700
5707 College Drive, Vermilion, Alberta, Canada T9X 1K5. Ph: 780 853 8400
Toll-free in Canada: 1 800 661 6490



VS203 Version: 6



Laboratory Procedures II

Calendar Description

This course focuses to a greater degree on skills and knowledge learned in VS106 and is intended to increase accuracy in the performance of clinical laboratory techniques. More sophisticated tests and skills are required for hematology, cytology and serology; with emphasis on consistency through test repetition. Parasitology skills, both theory and practical, are introduced in this course.

Rationale

This is a required course for students in the Animal Health Technology program. Diagnosis of many veterinary diseases and conditions is dependent on accurate laboratory techniques. This emphasizes the importance of a technician's ability to perform accurate and efficient clinical laboratory skills in everyday clinical practice.

Prerequisites

Successful completion of all first year AHT courses.

Co-Requisites

VS201, VS202, VS204, and VS205

Course Learning Outcomes

Upon successful completion of this course, students will be able to (for the specified topic)

Hematology

1. list the current technologies applied to today's veterinary hematology analyzers.
2. perform routine maintenance and quality control on hematology analyzers.
3. describe the actions of neutrophils in scenarios involving pain, inflammation, excitement and stress.
4. describe the morphology and recognize abnormal leukocytes in domestic species. Be able to identify the condition associated with the abnormal morphology.
5. describe how lymphocytes contribute to the immune response.

6. using knowledge learned in VS106, describe normal hemostasis and list disorders related to this process.
7. describe and perform hematological tests related to hemostasis
8. identify and describe the morphology of exotic species including birds, reptiles and other mammalian exotics.
9. define key terms associated with this unit.

Serology

1. list common immunologic tests performed in clinic.
2. describe the blood groups of domestic species and the procedures for blood typing and crossmatching.
3. list other immunologic tests that are sent out to reference labs.
4. define key terms associated with this unit.

Cytology

1. describe and perform the correct method for collection and handling of various cytological samples.
2. describe and identify microscopic structures related to cytology.
3. describe the normal and abnormal appearance, both microscopic and gross, of common cytological collection sites.
4. define key terms associated with this unit.

Parasitology

1. identify microscopically, external parasites of canine, feline, ruminant and equine species.
2. describe the life cycles of common external parasites of canine, feline, ruminant and equine species.

Chemistry

1. describe the proper methods for sample collection, handling and preparation for chemistry testing.
2. list and describe the common chemistry tests used to evaluate various organ systems and electrolytes in veterinary medicine.
3. describe various endocrine testing procedures used in veterinary medicine.

Resource Materials

Required Text

Sirois, M. (2015). *Laboratory procedures for Veterinary Technicians* (6th ed.). St. Louis,

MO: Elsevier.

Bellwood, B., & Andrasik-Catton, M. (2014). *Veterinary Technician's handbook of laboratory procedures* (1st ed.). Ames, IA: Wiley.

Reference Text

Hendrix, C. M., & Robinson E. (2017). *Diagnostic Parasitology for Veterinary Technicians*.

St. Louis, MO: Elsevier

Rebar, A. H. (1998). *Hemogram interpretation for dogs and cats* Wilmington, DE:

Ralston Purina.

Radin, M. J., & Wellman, M. L. (2001). *Interpretation of canine and feline cytology*.

Wilmington, DE: Ralston Purina.

Conduct of Course

This course contains both a lecture and laboratory component. The lecture component consists of 42 hours of lecture time and the laboratory component consists of a total of 16.5 hours. Each lab is 1.5 hours in duration.

Students are required to utilize previously learned content and skills from VS106 - Laboratory Procedures I in assignments and assessments.

The lecture portion of the course covers the theory necessary to understand and perform the laboratory portion. Proper terminology and definitions are taught during lecture time and these are reinforced during labs. The laboratory portion allows individual interaction with instructor/student and more practical work for each student. **STUDENTS ARE EXPECTED TO HAVE A LAB COAT BY THE FIRST LABORATORY PERIOD.**

Missing a laboratory, without an excused absence, results in a grade of zero for that specific lab portion. Excused absence from laboratory activities and assignments may be completed at a later date pending availability and approval of the instructor. Students should be aware that due to scheduling and availability of animals and samples, making up a missed laboratory session may not be possible. Students are responsible for any material covered within the lab missed.

Students are expected to follow Lakeland College's Laboratory Policy at all times. Failure to do so will result in the student no longer being able to participate in the labs.

Evaluation Procedures

Lecture Assignments/Quizzes	15%
Lecture Midterm Assessment	20%
Lecture Final Assessment	25%
Lab Assignments	20%
Lab Final Exam	<u>20%</u>
TOTAL	100%

It is required that a minimum of B- (70%) must be obtained in the laboratory portion and a minimum of C (60%) in the lecture portion of this course in order for a pass to be given.

Lakeland College is committed to the highest academic standards. Students are expected to be familiar with Lakeland College policies related to academic conduct and academic honesty and to abide by these policies. Violations of these policies are considered to be serious and may result in suspension or expulsion from the College.

Grade Equivalents and Course Pass Requirements

Letter	F	D	D+	C-	C	C+	B-	B	B+	A-	A	A+
Percent Range	0-49	50-52	53-56	57-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94	95-100
Points	0.00	1.00	1.30	1.70	2.00	2.30	2.70	3.00	3.30	3.70	4.00	4.0

Students must successfully pass or complete the lecture portion of the course with a 60% (C), and the lab portion with a 70% (B-). A mark in the lecture portion of 50-59% is recorded as a 'D'. A mark of 50-69% in the lab portion is recorded as a 'D'.

A grade of C (60%) in the lecture portion of this course and a B- (70%) in the lab portion of this course is required to progress to VS206 Animal Care and Nursing IV, VS208 Emergency Medicine and Critical Care and VS 210 Animal Health Technologist Practicum.

Attendance

Classroom and laboratory attendance is considered vital to the learning process and as significant to the students' evaluation as examinations and reports.

- a. Students having a combination of excused and/or unexcused absence of 20 percent or higher for the scheduled course hours will be required to withdraw and will automatically receive a "RW" (required withdrawal) for the course, regardless of any other evaluation results. (RW is a failing grade.)
- b. An excused absence is one that is verified with your Instructor. Verification should be prior to the absence or the next class day following the absence. Verification of the absence may take the form of a note from your doctor/College nurse regarding illness, or a note from another Instructor regarding a field trip or other activity, or authorization by your Instructor. An unexcused absence is anything NOT verified by the instructor prior to the absence or the next class day following the absence

NOTE: Any exceptions to the above attendance policy (e.g. timetable conflicts, work-related issues) must be approved in writing by the Department Chair prior to the beginning of the course.

It is the students' responsibility to know their own absentee record.

Normal hours are 8:30 a.m. to 6:30 p.m., with potential for evening courses, exams or extended field trips. Students are expected to be available for classes during these times.

Course Units/Topics

Lecture Hours: 42

- Hematology
 - Hematology Analyzers
 - Neutrophil Kinetics and Responses
 - Lymphocytes and Immunity
 - Hemostatic disorders
 - Exotic hematology

- Cytology
 - Sample collection and handling
 - Inflammation
 - Neoplasia
 - Cytology of specific sites

- Serology
 - In house testing
 - Reference lab testing
 - Blood type & crossmatching
 - Molecular diagnostics

- Parasitology
 - Protozoas
 - Arthropods
 - Parasitic Zoonosis

- Chemistry
 - Sample handling and preparation
 - Organ function tests
 - Protein evaluations
 - Electrolytes
 - Endocrine testing

Laboratory Hours: 30

- Hematology
 - Reticulocytes
 - Corrected WBC Counts
 - Left shifts
 - Hemostasis

- Cytology
 - Vaginal Cytology
 - Sample collection and preparation
 - Microscopic Evaluation

- Serology
 - Various in-house serology test kits (ELISA, agglutination...)

- Parasitology
 - External parasites of canines, felines, equines and ruminants
 - Protozoan identification

- Chemistry
 - Sample preparation
 - Chemistry Analyzers



Copyright©LAKELAND COLLEGE.
2602 - 59 Avenue, Lloydminster, Alberta, Canada T9V 3N7. Ph: 780 871 5700
5707 College Drive, Vermilion, Alberta, Canada T9X 1K5. Ph: 780 853 8400
Toll-free in Canada: 1 800 661 6490 E-mail: admissions@lakelandcollege.ca