



**M: Course Objectives / Learning Outcomes:**

Upon completion of AHTT 1102 - Veterinary Laboratory Procedures I, the student will be able to:

1. Prepare and maintain a veterinary practice laboratory.
2. Utilize common laboratory equipment, including the compound microscope, refractometer and centrifuge.
3. Employ additional instrumentation used in microbiology, haematology and parasitology, such as blood chemistry analyzers, electronic cell counters, and incubators,
4. Be competent in the calibration of a compound microscope.
5. Demonstrate recognition of quality control methods.
6. Value and practice safety in the laboratory.
7. Identify the major parasites of small and large animals.
8. Appreciate the life cycles, zoonotic potential and control methods for these parasites.
9. Perform diagnostic tests routinely used in veterinary parasitology.
10. Know the techniques used to obtain haematological samples, including those for blood chemistry analysis.
11. Understand the function, formation and abnormalities of components of blood.
12. Perform routine testing used in haematology, such as complete blood count.
13. Complete laboratory submission forms and be familiar with sample preparation for submission.
14. Identify and perform steps required for a complete urinalysis.

**N: Course Content:**

The major topics in the course include the following:

1. Introduction to Laboratory Equipment
  - function, operating procedures, care and maintenance of binocular microscope
  - calibration of instrumentation
  - use of refractometer and centrifuge
  - familiarization with spectrophotometer and other miscellaneous equipment
2. Parasitology:
  - life cycles of internal and external parasites common in veterinary medicine
  - control and zoonotic potential of these parasites
  - diagnostic techniques, and gross and microscopic identification
3. Clinical Pathology Part I (Haematology):
  - methodology of sample collection, separation, and preparation and handling for analysis
  - accurate record keeping and completion of laboratory requisition form
  - function and formation of erythrocytes, leukocytes and platelets
  - diseases and abnormalities of blood
  - bone marrow testing
  - platelets and understanding haemostasis

4. The CBC (complete blood count):
- impedance counters, laser flow cytometers
  - manual techniques using haemocytometer and unopette system
  - Buffy coat analysis and haemoglobin testing
  - packed cell volumes and serum protein counts
  - preparation of blood films, including staining and evaluation
  - red blood cell indices calculations, and performance of a differential white blood cell count
5. Components of the Urinalysis:
- sample collection techniques
  - gross evaluation
  - determining urine specific gravity and significance
  - biochemical analysis
  - sediment preparation and analysis

**O: Methods of Instruction:**

This course involves three hours of classroom instruction per week and two hours of laboratory activity per week.

**P: Textbooks and Materials to be Purchased by Students:**

Foreyt, W.J., 2001, *Veterinary Parasitology Reference Manual*. 5<sup>th</sup> ed., Blackwell Publishing.

Hendrix, C.M., 2002, *Laboratory Procedures for Veterinary Technicians*. 4<sup>th</sup> ed., Mosby.

McCurnin, D.M. & Bassert, J.M., 2006, *Clinical Textbook for Veterinary Technicians*. 6<sup>th</sup> ed., Elsevier.

**Q: Means of Assessment:**

TYPE OF EVALUATION	PERCENTAGE (total 100%)
Written Assignments	10
Laboratory Assignments & Projects	20
Quizzes	10
Midterm	25
Preparation, Participation & Attendance	10
Final Examination	25
<b>Grades:</b>	<b>A+ 95-100, A 90-94, A- 85-89, B+ 80-84, B 75-79, B- 70-74,</b>
	<b>C+ 65-69, C 60-64, C- 55-59, P 50-54, F 0-49.</b>

**R: Prior Learning Assessment and Recognition: specify whether course is open for PLAR**

None

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Education Council / Curriculum Committee Representative

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Dean/Director: Dr. Sandy Vanderburgh

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Registrar: Trish Angus