

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**



COURSE OUTLINE

VSCT 202 – VETERINARY CLINICAL PATHOLOGY II

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**SCHOOL OF SCIENCE, HEALTH AND CRIMINAL JUSTICE
VETERINARY SCIENCE TECHNOLOGY
MAY 2015**

- A. **TITLE:** Veterinary Clinical Pathology II
- B. **COURSE NUMBER:** VSCT 202
- C. **CREDIT HOURS:** 3
- D. **WRITING INTENSIVE COURSE:** No
- E. **COURSE LENGTH:** 15 weeks
- F. **SEMESTER(S) OFFERED:** Fall
- G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
2 lecture hours per week and 2 laboratory hours per week
- H. **CATALOG DESCRIPTION:**
A course of continued study (VSCT 112) in veterinary clinical pathology dealing with diagnostic laboratory procedures and their correlation with pathological conditions. This course includes discussion of normal hematology of the common domestic mammals and birds. Hematopoiesis, classification of anemias and abnormal leukograms are also covered. Students will also be instructed in the identification, life cycles and controls of animal parasitisms as well as the method and interpretation of a complete urinalysis. Laboratory practice in Hematology, Chemistry, Parasitology and Urinalysis of all the major domestic species of animals is included.
- I. **PRE-REQUISITES/CO-REQUISITES:**
a. Pre-requisite(s): VSCT 101, VSCT 112, VSCT 114 and VSCT 115
b. Co-requisite(s): none
- J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

<i><u>Course Objective</u></i>	<i><u>Institutional SLO</u></i>
a. Perform a complete blood count on feline, bovine and equine blood.	3. Prof. Competence
b. Trace the production pathways of all blood cells found in peripheral blood	3. Prof. Competence
c. Identify cellular abnormalities associated with anemia	2. Crit. Thinking 3. Prof. Competence
d. Analyze a urine sample and identify abnormalities in either the physical, chemical or microscopic exams.	2. Crit. Thinking 3. Prof. Competence
e. Recognize and discuss the life cycle and control of primary internal and external parasites associated with the common domestic animals.	1. Communication 2. Crit. Thinking 3. Prof. Competence

K. TEXTS:

Sirois, Laboratory Procedures for Veterinary Technicians Sixth Edition. St. Louis, Missouri: Elsevier, 2015.

Clinical Pathology Laboratory Manual.

L. REFERENCES:

Kaplan and Szabo, Clinical Chemistry Interpretations and Techniques, Lea and Febiger, Philadelphia, PA, 1979.

Coles, Embert H., Veterinary Clinical Pathology, Third Edition, W.B. Saunders Company, West Washington Square, Philadelphia, PA, 1980.

Schalm, Et Al, Veterinary Hematology, Third Edition, Lea and Febiger, Philadelphia, PA, 1975.

Schalm, O.W., Manual of Feline and Canine Hematology, Veterinary Practice Publishing Company, Santa Barbara, CA, 1980.

M. EQUIPMENT: none

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS: (list in bullet form, all outlines should be created for face-to-face course delivery, attendance is not measurable, but you can list participation – see examples below)

- Exams
- Quizzes
- Laboratory reports and quizzes
- Laboratory Practicum

P. DETAILED COURSE OUTLINE:

A. Normal Hematology

1. Species differences in blood
 - a. Feline - discuss morphological appearance of feline WBCs and RBCs and platelets
 - b. Bovine - discuss morphological appearance of bovine WBCs, RBCs, and platelets
 - c. Ovine/Caprine - discuss morphological appearance of ovine and caprine WBCs, RBCs, and platelets
 - d. Equine - discuss morphological appearance of equine WBCs, RBCs, and platelets
 - e. Porcine - discuss morphological appearance of porcine WBCs, RBCs, and platelets

- f. Avian - discuss morphological appearance of avian WBCs, RBCs, and platelets. Discuss the technique of Avian CBC
2. Hematopoiesis
- a. Define Hematopoiesis
 - b. Erythropoiesis - name cells and describe the pathway of erythropoiesis
 - c. Leukopoiesis - name the cells and describe the pathway of leukopoiesis for the five different WBCs
 - d. Thrombocyte generation - name the cells and describe the pathway of thrombocyte production
 - e. Methods of bone marrow collection
 - 1. Discuss common sites and procedures of bone marrow collection in the dog and cat
 - 2. Discuss preparation of a bone marrow smear
 - 3. Explain steps involved in bone marrow examination
 - 4. Define M:E ratio

B. Abnormal Hematology

1. Disorders of the RBC series;
- a. Explain the difference between regenerative and non-regenerative anemia.
 - b. Discuss the various causes of anemia.
 - c. Discuss the methods of diagnosis of different anemia.
 - d. Define polycythemia and discuss its cause and diagnosis.
2. Disorders of the WBC series;
- a. Explain the changes that occur with a Physiologic, Stress, and Inflammatory Leukogram and discuss why these changes occur.

C. Urinalysis

1. Sample Collection
- a. Explain methods of urine collection.
 - b. Discuss the common test used in a routine analysis (what they are and why they are performed).
 - c. List the normal parameters of small and large animal urine as discussed.

- d. Explain why changes occur in urine.

D. Parasitology

1. Explain the classification and anatomy of common animal parasites.
2. Discuss the life cycle and control of common large and small animal internal and external parasites.
3. Discuss the common laboratory methods used in the diagnosis of animal parasitisms.
4. Identify internal parasite ovum and external parasites

Q. **LABORATORY OUTLINE:**

Lab 1	Review Canine CBC
Lab 2	CBC, Bovine, Ovine, or Caprine and Fibrinogen
Lab 3	Feline CBC
Lab 4	Equine CBC and ESR
Lab 5	Reticulocyte Counting
Lab 6	Platelet Counting
Lab 7	Blood Coagulation and Hemostasis
Lab 8	Blood Parasites
Lab 9	Urinalysis
Lab 10	Fecal Tests
Lab 11	Semen Evaluation
Lab 12	Diagnostic Testing
Lab 13	Lab Practical