

VT-1521: VETERINARY PATHOLOGY I

Cuyahoga Community College

Viewing: VT-1521 : Veterinary Pathology I

Board of Trustees:

1/30/2025

Academic Term:

Fall 2025

Subject Code

VT - Veterinary Technology

Course Number:

1521

Title:

Veterinary Pathology I

Catalog Description:

Study of identification techniques, nomenclature, life cycles, epidemiology and control of internal and external parasites of small animals, horses and ruminants.

Credit Hour(s):

2

Lecture Hour(s):

1

Lab Hour(s):

3

Requisites

Prerequisite and Corequisite

BIO-1410 Anatomy and Physiology of Domestic Animals I or concurrent enrollment; and departmental approval: admission to program.

Outcomes

Course Outcome(s):

Discuss the clinically important external and internal parasites of companion animals and large animals.

Objective(s):

1. State the scientific and common names of the clinically important external and internal parasites of the dog, cat, horse, and food animals.
2. Advise an owner of the common clinical signs of infection associated with routinely encountered external and internal parasites of the dog, cat, horse, and food animals.
3. Identify the common zoonotic parasites, the clinical syndromes they cause in humans, the route(s) of infection and potential preventive measures.
4. Describe the clinical syndromes, prevention and treatment associated with *Dirofilaria immitis* infection.

Course Outcome(s):

Perform appropriate diagnostics for internal parasites for a veterinary patient.

Objective(s):

1. Identify both adult forms and immature forms of the common external and internal parasites of dogs, cats, horses, and food animals when viewed grossly (where applicable) and microscopically.

2. List the required equipment and perform gross fecal examinations, direct fecal smears, fecal flotations, sugar centrifugal flotations, modified McMaster's technique and water sedimentation techniques to evaluate the presence or absence of gastrointestinal parasites.
3. Perform qualitative assessments for internal parasite ova in companion animals and quantitative assessments for internal parasite ova in food animals and horses.
4. Identify those internal parasites whose indirect life cycles may cause significant disease in non-definitive hosts and understand the significance of those indirect hosts to preventing disease transfer.
5. Describe the life cycle of the heartworm, *Dirofilaria immitis*, and identify this parasite using both ELISA and non-ELISA technology techniques.

Course Outcome(s):

Perform appropriate diagnostics for external parasites and fungal infections in a veterinary patient.

Objective(s):

1. Identify the common ectoparasites, including immature forms, that are associated with a dog, cat, horse or food animal.
2. Perform a deep and a superficial skin scraping and identify what parasites would be recovered with each method.
3. Perform a tape prep and identify what parasites would be recovered with this method.
4. Describe the methods for detecting fleas and ticks.
5. Obtain samples for dermatophyte testing from a symptomatic and asymptomatic animal.
6. Perform a Wood's lamp screening test for dermatophytosis.

Course Outcome(s):

Describe appropriate treatment and control measures for the common internal and external parasites of small and large animals.

Objective(s):

1. Describe the life cycles of the common external and internal parasites of the dog, cat, horse, and food animals.
2. List the specific and/or broad spectrum anthelmintics that could be used to treat the common gastrointestinal parasites of dogs, cats, horses, and food animals.
3. List the drugs and topical compounds that could be used to treat the common ectoparasites of dogs, cats, horses, and food animals.
4. Describe potential contraindications for the use of certain medications, possible side effects of administration, and signs of toxicity.

Methods of Evaluation:

1. Laboratory and lecture quizzes
2. Laboratory and lecture unit exams
3. Comprehensive lecture examination
4. Comprehensive laboratory examination
5. Attendance
6. Journal article reviews
7. Research papers
8. Homework assignments

Course Content Outline:

1. Introduction to parasitology and common terminology
 - a. Important nematodes of the gastrointestinal system of small and large animals (inclusive of but not limited to the study of roundworms, hookworms, whipworms, threadworms, esophageal worms, stomach worms, "bloodworms," and pinworms)
 - b. Life cycles
 - c. Zoonotic disease potential
 - d. Clinical signs
 - e. Slide identification of adults and intermediate stages
 - f. Laboratory techniques for identification
2. Nematodes of importance to the respiratory system and urinary system of small and large animals (inclusive of but not limited to the study of *Dictyocaulus* and *Aelurostrongylus*)

- a. Life cycles
 - b. Zoonotic disease potential
 - c. Clinical signs
 - d. Slide identification of adults and ova
 - e. Laboratory techniques for identification
3. Important cestodes (tapeworms) of small and large animals (inclusive of but not limited to the study of *Taenia*, *Dipylidium*, *Echinococcus*, *Diphyllobothrium*, *Anoplocephala*, and *Moniezia*)
 - a. Life cycles
 - b. Zoonotic disease potential
 - c. Clinical signs
 - d. Slide identification of adults and intermediate stages
 - e. Laboratory techniques for identification
 4. Important nematodes of the cardiovascular system of small animals (*Dirofilaria immitis* vs. *Acanthocheilomonema reconditum*)
 - a. Life cycles
 - b. Zoonotic disease potential
 - c. Clinical signs
 - d. Slide identification of adults and intermediate stages
 - e. Laboratory techniques for identification
 - f. Prevention and treatment
 5. Important Trematodes (flukes) of small and large animals (inclusive of but not limited to the study of *Paragonimus*, *Fascioloides*, *Fasciola* and *Alaria*)
 - a. Life cycles
 - b. Zoonotic disease potential
 - c. Clinical signs
 - d. Slide identification of adults and intermediate stages
 - e. Laboratory techniques for identification
 6. Important protozoa of small and large animals (inclusive of but not limited to the study of *Isospora*, *Cryptosporidium*, *Giardia*, *Sarcocystis*, and *Eimeria*)
 - a. Life cycles
 - b. Zoonotic disease potential
 - c. Clinical signs
 - d. Slide identification of adults and intermediate stages.
 - e. Laboratory techniques for identification
 7. Anthelmintics useful in the treatment of nematodes, cestodes, protozoa, and flukes.
 - a. Single spectrum anthelmintic usages/contraindications/side effects
 - b. Broad spectrum anthelmintic usages/contraindications/side effects
 8. External parasites of small and large animals (fleas, lice, ticks, and mites)
 - a. Life cycles
 - b. Zoonotic disease potential
 - c. Clinical signs
 - d. Identification of adults and intermediate stages
 - e. Laboratory techniques for identification
 - f. Treatment and prevention
 9. Dermatomycosis of small and large animals
 - a. Life cycles
 - b. Zoonotic disease potential
 - c. Clinical signs
 - d. Identification of adults and intermediate stages
 - e. Laboratory techniques for identification
 - f. Treatment and prevention

Resources

Hendrix, Charles M. and Robinson, Ed. *Diagnostic Veterinary Parasitology for Veterinary Technicians*. 6th ed. St. Louis, MO: Elsevier, 2022.

Bowman, Dwight. *Georgis' Parasitology for Veterinarians*. 11th ed. St. Louis, MO: Elsevier, 2020.

Elsheikha, Hany M, and Khan, Naveed Ahmed. *Essentials of Veterinary Parasitology*. 1st ed. Norfolk, UK: Caister Academic Press, 2011.

Zajac, Anne M. and Conboy, Gary A. *Veterinary Clinical Parasitology*. 8th ed. Ames, Iowa: John Wiley & Sons, Inc., 2012.

Bassett, Joanna. *McCurnins Clinical Textbook for Veterinary Technicians and Nurses*. 10th. 2021.

Resources Other

1. Companion Animal Parasite Council Website: <http://www.capcvet.org/> (accessed November 2019)
2. National Center for Veterinary Parasitology Website: <https://www.ncvetp.org/> (accessed November 2019)

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