

Health Management II, VETM*3410

Fall & Winter 2017-2018

0.75 Credits

Calendar Description

This course is a continuation of the Phase 1 course Health Management I. Previously presented concepts will be explored in greater depth and complexity and new material will address three main themes: evidence-based decision making, animal behaviour and welfare, and public health.

Emphasis will be placed on relevant epidemiological tools for understanding disease causation, evidence based medicine and critical appraisal of the literature, surveillance and outbreak investigation. Animal behaviour and welfare issues will be presented in a species/industry context. The public health section will focus on regulatory matters, food safety and zoonotic disease issues.

Course Coordinators

Dr. Derek Haley 2539 PopMed, Ext. 53677

dhaley@uoguelph.ca

Dr. Lee Niel 2526 PopMed, Ext. 53030

niell@uoguelph.ca

Instructors

Evidence-based Decision Making

Dr. David Kelton 2537 PopMed, Ext. 54808

dkelton@uoguelph.ca

Dr. Stephen LeBlanc 2543 PopMed, Ext. 54594

sleblanc@uoguelph.ca

Dr. Andrew Peregrine 3825 PAHL, Ext. 54714

aperegri@uoguelph.ca

Animal Behaviour and Welfare

Dr. Derek Haley 2539 PopMed, Ext. 53677

dhaley@uoguelph.ca

Dr. Lee Niel 2526 PopMed, Ext. 53030

niell@uoguelph.ca

Public Health

Dr. Jan Sargeant 2502 PopMed, Ext. 54045

sargeanj@uoguelph.ca

Teaching Assistants

TBD

Administrative Information

For questions regarding academic consideration, continuation of study, academic misconduct, safety, confidentiality, and experiential learning involving use of animals, please refer to the Phase information on the OVC website.

Course Description

Health Management: Definition

Health management is the promotion of health and prevention of disease in animals within the economic / business framework of the animal owner/industry, while addressing the issues of animal welfare, human safety and environmental impact.

Course Overview

The course will present information and promote the development of skills and attitudes necessary to understand and effectively deal with health management and population health issues in greater depth. The course has three main units, within which there are several subsections:

1. Evidence-Based Decision Making

- A. Evidence-based Veterinary Medicine in the context of:
 - a. Diagnostic process
 - b. Treatment decisions
 - c. Preventive programs
- B. Surveillance
- C. Outbreak Investigation

2. Animal Behaviour and Welfare

- A. Clinical Animal Behaviour
- B. Animal Welfare

3. Public Health

Course Objectives

1. Evidence-Based Decision Making

A. Evidence-Based Veterinary Medicine

- Define the term 'evidence-based veterinary medicine' and explain the strategies involved in the practice of evidence-based medicine.
- Interpret the results of diagnostic tests and use these data appropriately when making decisions about a case. Describe the appropriate use of diagnostic tests and their roles in both quantitative and subjective clinical assessment. This includes knowing how to use sensitivity/specificity, pre/post-test probability of disease, predictive

values, likelihood ratios and the measurement and improvement of agreement in the diagnostic process.

- Explain the value of clinical trials in the development of evidence-based treatment options.
- Critically appraise scientific literature to weigh evidence on opposing views.
- Explain how causal reasoning is utilized to assess risk and the association between factors and health outcomes in evidence-based prevention programs.
- Identify and explain the principal roles of veterinarians in reportable disease control, and in the detection and prevention of various adulterants (including veterinary drug residues, microbial hazards, and lesions of animal disease) in milk, meat and eggs.

B. Infectious Disease Control and Surveillance

Students will be able to:

- Compare and contrast the methods of infectious disease control.
- Explain health monitoring and surveillance at the individual, local and higher population levels.
 - Explain and describe the role of health and/or disease monitoring systems in the context of clinical practice and health management.
 - Explain the role of the veterinarian in local, regional, national and international surveillance programs.
 - Describe the strengths and weaknesses of existing animal health surveillance programs.

C. Outbreak Investigation

Students will be able to:

- Identify, quantify and assist with outbreaks of disease problems.
 - Explain and describe the conduct of an outbreak investigation.
 - Calculate and interpret the appropriate rates and statistical analyses applied to outbreak investigation.

2. ANIMAL BEHAVIOUR AND WELFARE

A. Clinical Animal Behaviour

Students will be able to:

- Explain techniques for assessing and measuring animal behaviour for individual animals and groups of animals.
- Identify the origin of behavioural alterations as it relates to the physical and behavioural health of the animal.
- Identify and explain the differences between normal, abnormal, and problem behaviour.
- Describe common normal, abnormal and problem behaviour in domestic animals and explain the ethological principles underlying them.

- Describe behaviour modification therapies and preventative treatments for common abnormal and problem behaviour in domestic animals.
- Describe how behaviour can be used to understand the welfare of animals.

B. Animal Welfare

Students will be able to:

- Identify key animal welfare issues in common animal industries, and possible methods for prevention and treatment.
- Explain techniques for practical assessment of animal welfare for individual animals and groups of animals (e.g., veterinary clinics, dairy cattle).

3. Public Health

Students will be able to:

- Describe the role of the veterinarian in inspection of foods of animal origin.
- Explain the range and magnitude of human health risks posed by residues of veterinary drugs and other chemicals in foods from animals.
- Explain the responsibilities of veterinary practitioners to avoid drug residues in foods of animal origin and discuss principles of residue avoidance in veterinary practice.
- Explain, in a veterinary context, the principles of microbial ecology in foods from animals.
- Explain, in general terms, the range and magnitude of health risks to the public posed by microbial pathogens and their toxins in foods from animals and identify procedures to reduce the risks.
- Describe the principles of government animal disease regulatory programs and the responsibilities of veterinarians with respect to these programs, and with respect to reportable diseases.
- Explain, in general terms, and be able to give examples of health risks to the public posed by domestic animals, in terms of zoonotic and food-borne disease.
- Identify the role of veterinarians in private veterinary practice in public health.
- Explain the expectations of a private veterinary practitioner to address a suspected case of Rabies in companion, wild and food animals.

Assigned Work

For all units students are responsible for the following:

- Materials covered during lectures and labs
- Participation in group discussions as necessary
- Assigned readings and in-class assignments

Evidence-Based Decision Making Assignment:

- Critical Evaluation of the Literature Assessment (lab exercise and written submission)

Animal Behaviour and Welfare Assignment:

- Behaviour Problem Client Handout

Evaluation

The following chart lists the various evaluations within the course that will count toward the final grade. Students are required to complete each midterm exam, the course assignments and the final exam, and will be graded as incomplete in this course if any of these components are missing. If a midterm exam is missed for appropriately documented medical or compassionate reasons (please see the appropriate section of the Phase 2 website), then arrangements will be made by the course coordinator for a make-up exam at the earliest possible date following the midterm exam date. Further details pertaining to the evaluations for the course appear below the table.

Date	Format	Content	Percent of Course Grade
IN-COURSE ASSESSMENT (35%) :			
Week 9 (Oct 30)	Written formative test	Lecture and laboratory material covered in the course to that point.	6%
Week 9 (Nov 3)	Written submission	Critically Appraised Topic.	12%
Week 12 (Nov 20)	Written formative test	EBVM lectures 13 & 14, and EBVM Lab 4 (Peregrine material)	6%
Week 26 (Mar 2)	Written submission	Behaviour Problem Client Handout	5%
Week 27 (Mar 5)	Written formative test	Lecture and laboratory material covered for Animal Behaviour and Welfare unit	6%
FINAL EXAM - WHOLE COURSE (65%) :			
Exam period (Apr 18)	Written - multiple choice, short answer, short essay	Cumulative covering all lecture and laboratory material for the entire course.	65%
Course Total:			100%

Formative tests: The formative test questions for the course material will be distributed among 3 of the Phase 2 midterm examinations on the dates listed above. Each component may consist of multiple choice, short answer and/or short essay type questions. A mark will be assigned for each of the 3 components as described in the Evaluation table above, and this will contribute to the final grade for the course.

Critically Appraised Topic: During the course students will be asked, in groups, to develop a clinical question regarding the care of a patient and then to search the veterinary literature to find up to three current articles published in refereed veterinary journals that will help to answer the question. The students will evaluate the strengths and weaknesses of the articles according to the guidelines for critical appraisal presented in the course. Based on the quality of the evidence and the arguments presented in these reference papers, the students will answer the clinical question and make a decision about how to proceed with the management of the clinical

case in a written report. Once chosen by the student, the clinical question will be submitted to Dr. Kelton or the graduate teaching assistant for approval, prior to the end of Week 4 (Sept 29). The final written evaluation will be assessed for content and quality. The written submissions will be due at the end of Week 9 (Nov 3). Further details about the expected content and format will be posted on the course site in the Fall semester.

Behaviour Problem Client Handout: Students will be asked to choose from a list of behaviour problems relevant to either a companion or food animal species, and to work in pairs to develop a client handout about the problem. The assignment will build on the theories and techniques discussed in class by incorporating relevant scientific literature, industry guidelines, and relevant legislation. The handout will be assessed for clarity, content and quality. Further details on the expected content and format will be forthcoming in the Winter semester.

Final Exam: This exam will be written in the final exam period, as scheduled. The exam will be of 3 hours duration and will address the entire course. This exam will account for 65% of the final marks in the course. Questions will be multiple choice, short answer, or short essay format.

Resources

D2L - the Health Management II D2L site may be reached via the OVC website. This site will contain lecture notes and power point presentations, links to other useful material, references for assigned readings, as well as assignments.

Assigned Reading - Printed notes and reading material will not be provided. Reading material (journal articles, texts, etc.) will be placed on reserve in the OVC library or posted on the D2L course website for students who wish to obtain the material independently.

Text Books - there are no **required** textbooks for this course.

- The text entitled "Handbook of Evidence-Based Veterinary Medicine" by Peter Cockcroft and Mark Holmes, published by Blackwell Publishing (ISBN 1-4051-0890-8) is **recommended** for the evidence-based decision making section of the course.
- The text entitled "The Ethology of Domestic Animals: An Introductory Text" Second Edition (2009) by Per Jensen, published by CABI Publishing (ISBN 1-85199-602-7) is **recommended** for the animal behaviour and welfare sections of the course.
- Students who wish to explore areas of interest beyond the scope of this course in the other content areas should see the course instructor(s) for further recommended resources.

Schedule

Lecture and laboratory dates, times and rooms are listed in the Phase 2 schedule.