

**Wildlife Diseases – WLF 305, MAJOR CHANGE FORM version Revised Nov. 5 2016**  
**CRN: TBD**

**Department of Veterinary Medicine**

Syllabus & Course Objectives

**1. Course information:**

Wildlife Diseases (WLF 305, 3 credits) will meet in Murie XXX (times TBD)

Prerequisites: Biol 310 or Biol 115 and 116 or permission of instructor.

**2. Instructor information:**

Dr. Todd O'Hara, AHRB 145, [tmohara@alaska.edu](mailto:tmohara@alaska.edu); Office Hours TBD, 474-1838

**3. Course readings/materials:**

Recommended Text: Wobeser, G.A., *Essentials of Disease in Wild Animals*, Blackwell Publishing, Oxford, UK, First edition, 2006: pp. 243 ISBN = 0-8138-0589-9

Website for USGS texts

[http://www.nwhc.usgs.gov/publications/field\\_manual/](http://www.nwhc.usgs.gov/publications/field_manual/)

*Field Manual of Wildlife Disease*

[http://www.nwhc.usgs.gov/publications/disease\\_emergence/](http://www.nwhc.usgs.gov/publications/disease_emergence/)

*Disease Emergence and Resurgence: The Wildlife-Human Connection*

Helpful website - <http://www.wildlifeinformation.org>

**4. Course description:**

This course builds on the strong wildlife interests of students, and animals in general, who are eager to learn about the diseases that impact vertebrates as individual organisms and populations. Thus, this course fits with those interested in veterinary medicine, conservation, wildlife biology and natural resources management careers (curriculum). The course is not required for any particular degree but will help students applying for veterinary medical school (obtain an upper level biomedical course) and allow those working on wildlife to have better understanding about the impact of disease agents on animals and humans.

**Approach**

The course starts out with a lecture series introducing the mechanisms of disease. This is followed by lectures on common diseases of mammals and birds using a structure based on disease causing agents (etiology). Using a variety of diseases occurring in wildlife we will discuss the cause, species affected, occurrence, ecology, clinical disease, pathology, differential diagnoses, specimens for diagnosis, and the significance to the animal and population. It is impossible to discuss all causes of disease but our review of certain disease causing agents will emphasize the importance of proper diagnostics and how the biologist can facilitate this. The focus is on mammals with some time spent on avian and fish species.

**What the course cannot do**

A single semester course in *wildlife diseases* cannot impart diagnostic skills or research capacity to address wildlife diseases for an individual. Work that requires diagnostics or research tools must involve trained diagnosticians/researchers. For diagnostics usually veterinary pathologists with wildlife experience and consultation from experienced wildlife biologists is

needed. This by no means limits wildlife disease work to individuals with diagnostic training. Wildlife diagnostics is only one part of wildlife disease work and may or may not be necessary in all research projects. In fact, the best wildlife disease work is generally done by teams that include wildlife biologists, population biologists, ecologists, pathologists, toxicologists, microbiologists, parasitologists, etc.!

Catalog description **WLF F305 Wildlife Diseases** 3 Credits

Basic concepts of parasitic, infectious, environmental and nutritional diseases. Specific study of Alaska wildlife diseases. Basic necropsy technique and chemical immobilization. Special fees apply. Prerequisites: BIOL F115X and BIOL F116X or equivalent; or permission of instructor. Recommended: BIOL F310. (3+0) [to be modified as suggested upon approval of major change]

**5. Course Goals (general), and (see #6)**

The objective of this course is to introduce the natural resources management, fisheries (e.g., marine mammals), wildlife biology and/or biology (e.g., pre-health professional) student to disease processes at the individual animal and population levels. This course is intended to impart a basic understanding of disease processes and a basic knowledge of some common disease entities with a focus on the Arctic and sub-arctic regions (marine and terrestrial). Effects on populations and diseases of human health significance are addressed as well. There are numerous taxa to consider and in this course the bias is towards mammals, with some avian and fish subjects covered.

**6. Student Learning Outcomes (more specific)**

*Mechanisms of disease* – students will appreciate the fundamentals of the basic host defenses and responses related to the disease outcome. Disease is a manifestation of the host response more than a result of the agent initiating the process.

*Agents of disease* – students will know that there are many classes of these agents and recognize how they can adversely impact wildlife. Some agents are very species specific while others can adverse impact numerous host species; including humans.

*Ecology of disease (One Health)* – the key to this course is for the student to learn and respect that environmental, animal and human health are inextricably linked and often collectively known under the banner of “One Health”.

**7. Instructional methods:**

The teaching techniques emphasize lectures, case studies (published manuscripts provided), group discussion (manuscripts, current events), private instruction (upon request; usually involves aspects of advising), and review of exams with open discussion.

**8. Course calendar: WILDLIFE DISEASES - WLF 305 (MAJOR change version)**  
**WILDLIFE DISEASES - WLF 305 (MAJOR change version) LECTURE SERIES**  
**Murie XX (assumes Tu, Th delivery; can be adapted to M, W, F) Revised Nov. 5 2106**

<b>Week</b>	<b>Lectures</b>	<b>Date</b>	<b>Topic for Lecture (Tuesdays)</b>	<b>Wobeser 2006/ USGS Field Manual</b>
1	1-2	1/17 and 19	<b>Mechanisms of Disease:</b> Introduction, agents of disease, host immune processes.	Intro/Chapter 1&2
2	3-4	1/24 and 26	<b>Mechanisms of Disease:</b> Diagnostic process, agents and injury (disease!)	Chapters 3, 4, 5
3	5-6	1/31 and 2/2	<b>Mechanisms of Disease:</b> Blood, inflammation, neoplasia & tissue responses	Chapter 6
4	7-8	2/7 and 2/9	<b>Mammalian Diseases:</b> Introduction to viruses. Selected viruses as examples.	Chapters 7, 11, 12
5	9-10	2/14 and 2/16	<b>Mammalian Diseases: TSEs, CWD–prion*.</b> Manuscripts provided. Reviewed by O’Hara followed by discussion. One paper per day.	Ch. 3 & p. 32-33 Handouts
6	11-12	2/21 and 2/23	<b>Non-infectious diseases:</b> trauma, toxicants, malnutrition, etc.	Chapter 9 Handouts
<b><u>7</u></b>	<b><u>Exam</u></b>	2/28 and 3/2	<b>Exam Midterm:</b> lectures 1-12. Day 13, review**; Day 14 exam	<i>Examination Midterm</i>
8	Discussion	3/7 and 3/9	Effects of Oil on Wildlife: Marine Mammal Emphasis. Day 15 (ppt); Day 16 discussion of assigned manuscript.	Presentation (ppt). Handouts
9	Break	3/13-17	<b>Spring Break</b>	<i>Break</i>
10	17-18	3/21 and 3/23	<b>Mammalian Diseases:</b> Introduction to parasites Selected parasitic diseases: Protozoa – Giardia, Cryptosporidium and T. gondii. “Worms” – Echinococcus	Chapter 3 p. 35-40 Review parasite collection in class. Handouts

11	19-20	3/28 and 3/30	<b>Mammalian Diseases:</b> Selected parasitic diseases (con'd). Ticks, mites, mosquitoes, flies, etc.	Chapter 3 p. 35-40 Handouts
12	21-22	4/4 and 4/6	1) Non-steroidal anti-inflammatory drug (NSAID) use and rabies, One Health; 2) Emerging Disease, Transmissible neoplasia	Slides (ppt) and articles provided. Handouts
13	23-24	4/11 and 4/13	<b>Mammalian Diseases:</b> Bacterial diseases; Brucellosis, Tularemia. Major diseases, 1 lecture for each agent.	Chapter 3 p. 33-35 Handouts
14	23-24	4/18 and 4/20	<b>Mammalian Diseases:</b> Bacterial diseases; Coxiella, Salmonella, Pasteurella. Introduction to fungal diseases	Chapter 3 p. 33-35 Handouts
15	Final	4/25 and 4/27	<b>Hourly Exam</b> (review**; 2 <sup>nd</sup> exam)	
<b>16</b>	<b>Final</b>	TBD	<b>Final Exam</b>	

\*TSEs, CWD–prion. TSE = transmissible spongiform encephalopathies, CWD = chronic wasting disease.

\*Reviews – designed to enhance comprehension and are both instructor and student driven. Use the upcoming test as motivation for discussion. This time also allows for any unexpected class cancellations (e.g., snow/ice).

### 9. Course policies (specific course rules, attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity).

#### Attendance/tardiness:

Attendance is vital to the grade. Much, if not all, of the exam information will be based on information from lectures, notes, discussion, etc. during class. “Notes” from lectures must be obtained from another student when absence is unavoidable. Attendance is recorded occasionally to maintain an idea of who is actually attending. Repeated tardiness will be noted. Out of respect for the instructor and classmates please be on time – disruptive tardiness is not appreciated and is considered in the participation grade.

#### Making up an Exam

An exam may be taken ahead of schedule if a suitable time can be agreed upon if there is a good reason. Exams can be made up after the scheduled date but this is at the discretion of the instructor (i.e., it is not guaranteed) and a **very good reason** for missing the exam must be **documented**. The instructor often requests input from the Biology and Wildlife Department Chair on how to best handle these situations. The make-up exam, or the early exam, will not be the same exam given to the other students. There will only be one make-up exam offered. Students who miss more than one exam will have difficulty passing the course.

#### Plagiarism

Simply will not be tolerated in any form. When in doubt cite and quote your sources. If you do not know what this refers to please meet with Dr. O'Hara.

#### Academic integrity

Examinations are to be performed by the individual and any attempts to gain assistance or knowingly provide assistance during an examination will be punished according to University policy towards "cheating." Those taking early or make up exams are to not request assistance with the exams nor provide it. The exams should not be discussed until ALL members of the class have taken a specific exam.

### **10. Evaluation: *Wildlife Disease – WLF 305 - Grades***

Participation (discussions, Q&A, etc.):	14.3%	(50 points)
Midterm Examinations:	28.6%	(100 points)
2 <sup>nd</sup> Examination:	28.6%	(100 points)
Final (cumulative):	28.6%	(100 points)

Total Points = 350

Letter grades: no +/- grades given.

A = 89.5-100%, B = 79.5-89.4%, C = 69.5-79.4%, D = 59.5-69.4%, F <59.5%

[% are rounded up to the highest 0.X%]

### **11. Support Services:**

The instructor is available to assist as noted above. On request, the instructor can provide other contacts on campus or off campus to pursue any interests or special needs identified.

Student Support Services are available at UAF: <http://www.uaf.edu/sssp> These services include: free tutorial services; academic advising, mentoring, and personal support; direct financial assistance to qualified low-income participants; use of laptop computers, labs, and other technology resources; and cultural and social engagement. The office is located at Gruening 512.

**12. Disabilities Services:** <http://www.uaf.edu/disability/> The Office of Disability Services implements the Americans with Disabilities Act (ADA), and ensures that UAF students have equal access to the campus and course materials. The instructor will work with the Office of Disabilities Services (208 WHITAKER BLDG, 474-5655) to provide reasonable accommodation to students with disabilities. Please make the Instructor aware of any disabilities that may affect access or performance.

### **13. Title IX Protection**

University of Alaska Board of Regents have clearly stated in BOR Policy that discrimination, harassment and violence will not be tolerated on any campus of the University of Alaska. If you believe you are experiencing discrimination or any form of harassment including sexual harassment/misconduct/assault, you are encouraged to report that behavior. If you report to a faculty member or any university employee, they must notify the UAF Title IX Coordinator about the basic facts of the incident.

Your choices for reporting include:

- 1) You may access confidential counseling by contacting the UAF Health & Counseling Center at 474-7043;
- 2) You may access support and file a Title IX report by contacting the UAF Title IX Coordinator at 474-6600;
- 3) You may file a criminal complaint by contacting the University Police Department at 474-7721.